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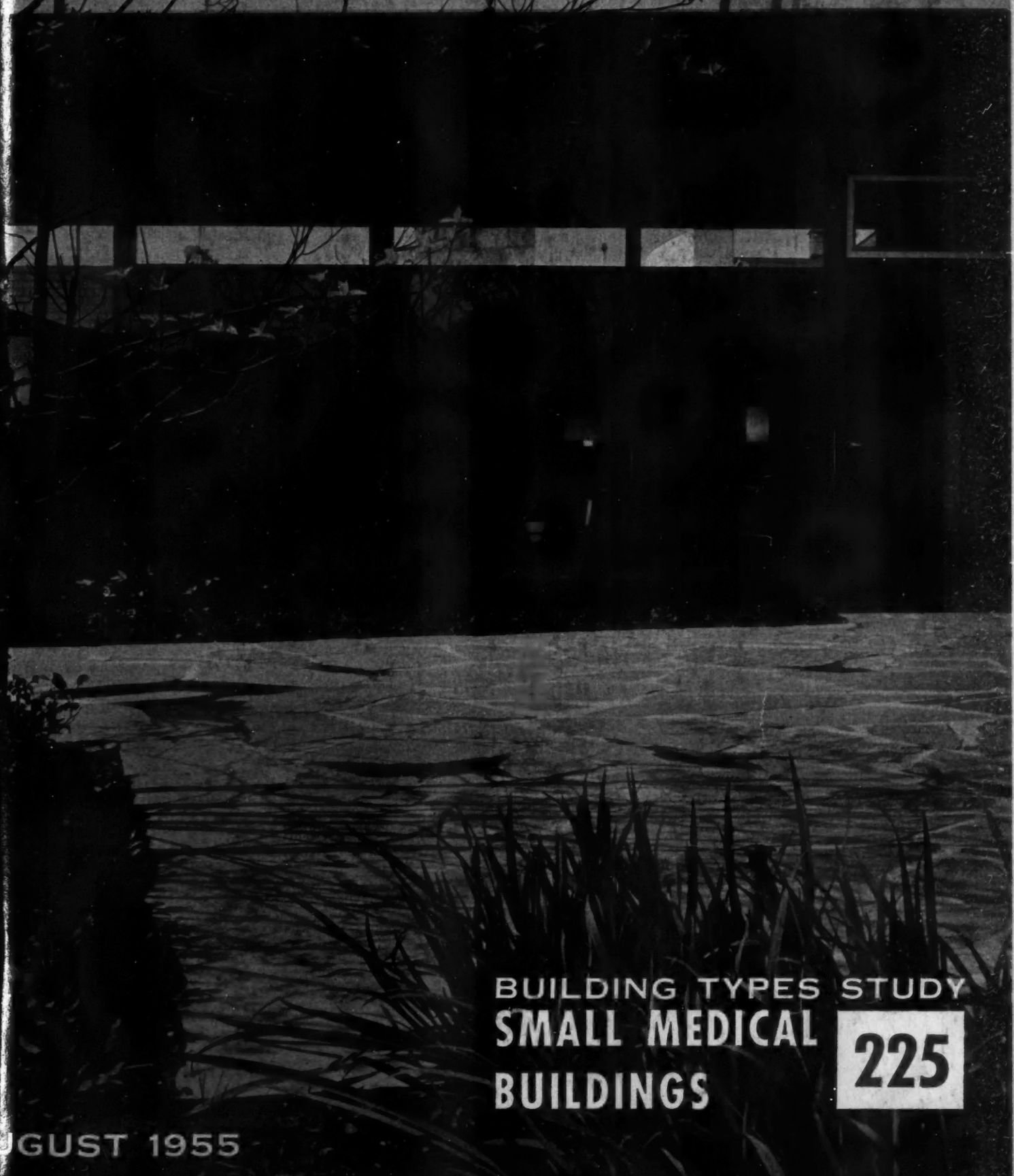

BUILDING TYPES STUDY

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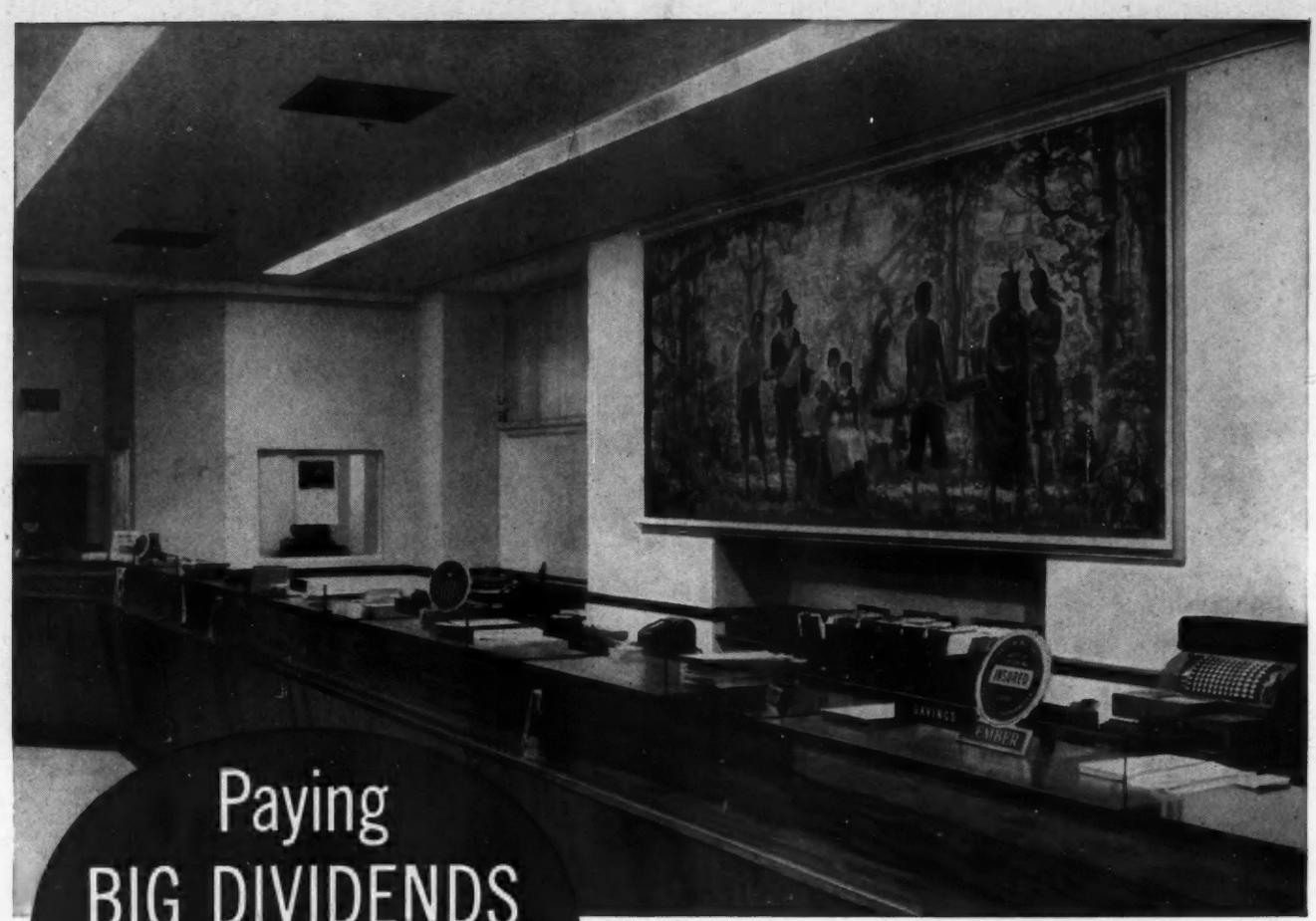

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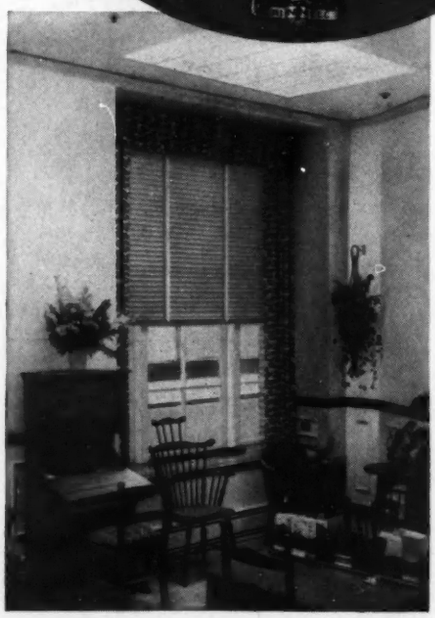

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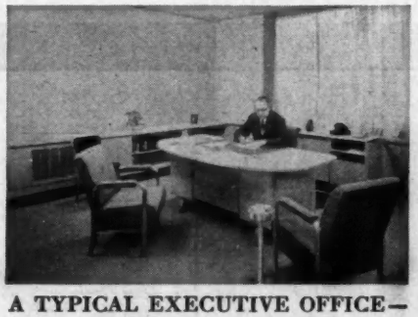

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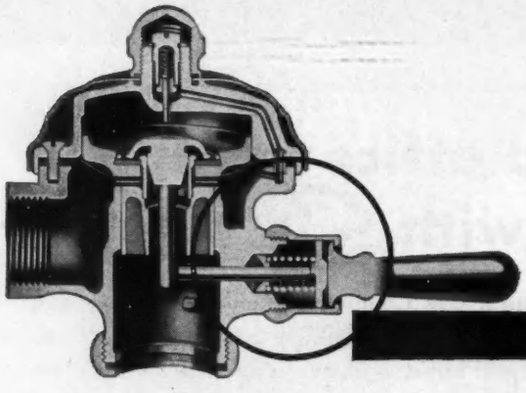

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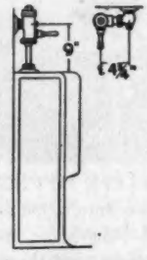

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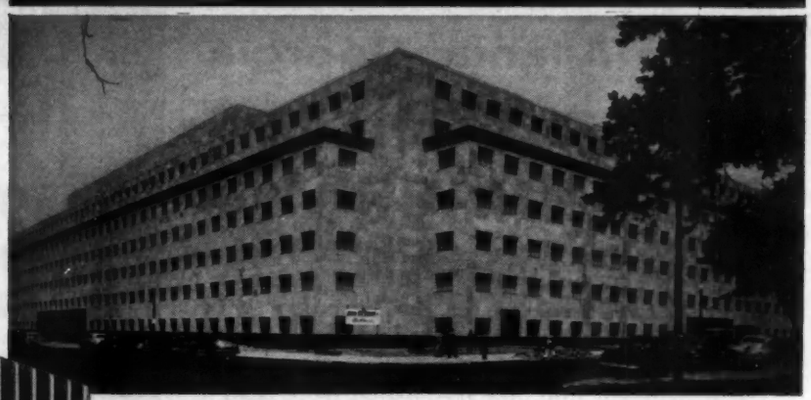

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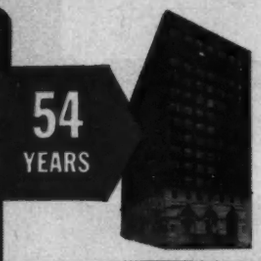

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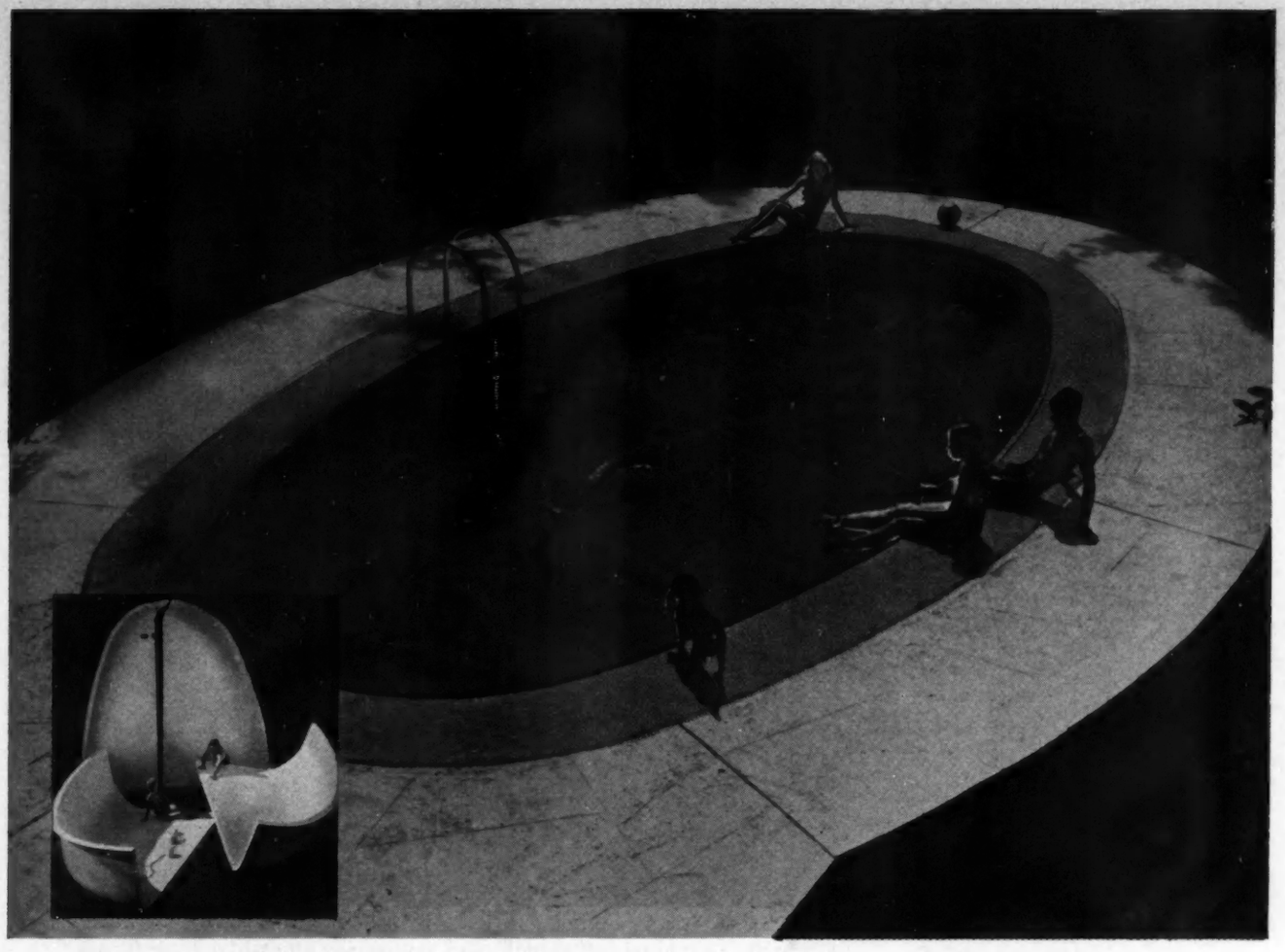

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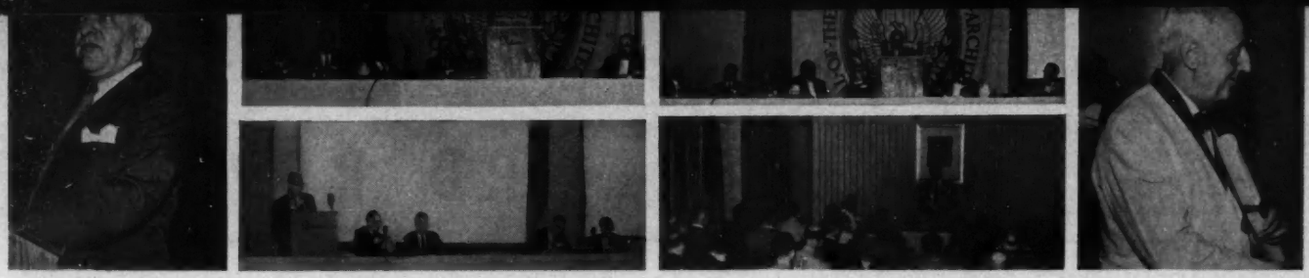
PERSPECTIVES

DESIGNING FOR THE COMMUNITY: "This seems to me to be the keynote of this keynote," said architect and planner Albert Mayer of New York in his opening address at the A.I.A. convention: "that instead of using great new tools for a great new life, we are using them to prolong and to deepen obsolescence, to painfully prolong what should be replaced." Mr. Mayer, who said a general frame of reference is badly needed in an era when a succession of single remedies is the popular approach to the problem of the community, drew a devastatingly detailed word picture of today's urban realities and then turned to consideration of "the way out." "The individual architect can add distinction and partially affect program in what he is permitted to do as an individual practitioner. But that can go only so far. It is the Institute corporately and the Chapters who should be able to influence what he is able to do, to make it more congenial, more significant, more a contribution to true urbanity, a contribution to and a part of a more valid environment." The vastness and complexity of the problem require a new approach and "combined operations and expertise" in the solution, Mr. Mayer declared, and he called on the Board of the Institute to search "in a new and creative way" for an effective program of action in which the efforts of all architects could be united. "Present approaches assume we must preserve our present structure. . . . Let us make an approach the other way: analyze and visualize what we would do if we could start from scratch now in the midst of our new technological opportunities, and see what we can salvage from what we have in the light of that."

PLANNING NEEDS THE ARCHITECT, said John Tasker Howard, president of the American Institute of Planners, "in five ways: as a knowledgeable designer of buildings, as a specialist in civic design, as a potential recruit to the planning profession, as a member of commissions and boards that direct the public agencies engaged in planning, and as a citizen participant in planning affairs." Other members of the seminar on "Rebuilding Our Cities," all architects, acknowledged the architect's responsibility in all of these areas, but preferred a broader — if less specific — definition of his role. As Robert E. Alexander of Los Angeles put it, "The question is not 'How can the architect practice city planning?' — it is 'How can he practice architecture without planning?' Carl Feiss, former government planner, now a private consultant in Washington, D. C., reproached his colleagues for not accepting their responsibility for leadership in "the creative renewal of American cities." And Dean G. Holmes Perkins of the College of Architecture of the University of Pennsylvania noted that "it is the architect's first duty to put people back into the picture. . . . The shapes the community will take will depend on public preference but without the architect's imagination the citizen will be denied his rightful freedom of choice." . . . Approaches to the expansion problems of smaller and larger urban areas, development housing, and public and commercial facilities for new areas were discussed in the seminar on "The Architecture of Community Expansion." All architects must be concerned with community expansion, said Moderator Norman J. Schlossman of Chicago: "For although each of us may never have a community, a housing development, or a regional shopping center to design, everything we architects do is a form of expansion which never exists in a vacuum, but rather in relationship to its environment."

WILLEM DUDOK, making the principal address at the annual banquet after receiving the 1955 A.I.A. Gold Medal, challenged American architects to the creation of "a new and really great city planning art." Their cities, he told them frankly, do not sufficiently reflect their great architectural abilities. "Of course it is only through teamwork that many facets of modern city planning get what they need. This makes us forget sometimes that the city as a whole after all forms an architectural form problem. And precisely because the efficient and beautiful form is of such great and lasting importance I am convinced the skillful architect is naturally and obviously the man who must create the harmonious synthesis of the various facets." Lamenting the "decay" of "the art of building cities," Mr. Dudok warned that "the architectural beauty of cities . . . is never the result of unbridled liberty but of a firm form-will" and added that perhaps modern architecture, "which in the separate building expresses itself so self-consciously," may find its effective development "when we see the problem large and apply it to the city-as-a-whole, realizing that we have to cooperate in the proper serving spirit." Mr. Dudok insisted that "we are living in a great time" and rejected the argument that "the chaotic aspect of our cities is the expression of our culture. . . . It is no characteristic variety that our cities show, but a characterless chaos; and I am too good a democrat to accept this as an expression of our beneficial form of government, a form of government which in so many fields has proved to understand that there is no liberty without reasonable restriction and no culture without order. . . . It is up to you to make your liberty-loving people more planning-minded." Americans, Mr. Dudok said, should turn the attention of their "Maecenasses who give fabulous sums for many good things" to the opportunity for creating "a new culture of cities which is of the New World." On the convention theme: "Designing for the community? It is not enough! Designing for the world."



Highlights of program were keynote address by Albert Mayer (far left) and banquet speech by 1955 A.I.A. Gold Medalist Willem Dudok (far right). There were four seminars: "Keeping the Client a Friend" featured panels on modular coordination and (left center, top) office practice—Austin W. Mather, Bridgeport, Conn.; Daniel Schwartzman, New York; Harvey Schwab, Pittsburgh; Moderator David Baer, Houston; Walter Taylor, A.I.A. director of education and research. "The Architecture of Community Expansion" had as moderator Norman Schlossman, Chicago; as speakers Park Martin, Allegheny Conference on Community Development executive director; Arch Winter, Mobile, Ala.; Thomas Coogan, N.A.H.B. past president; Victor Gruen, Los Angeles and New York; and (not pictured) L. Morgan Yost, Chicago. "Rebuilding the City" (right center, top) had Urban Renewal Administrator James W. Follin (opening luncheon speaker) and Chairman William Ballard, A.I.A. Committee on Urban Design and Housing, as platform guests; speakers John Tasker Howard, president, American Institute of Planners; Robert Alexander, Los Angeles; Miss Marcia Rogers, 23-year-old architect with Pittsburgh Regional Planning Association; Dean Holmes Perkins, University of Pennsylvania; Richard Perrin, Milwaukee Housing Authority executive director (moderator); Carl Feiss, Washington. "Chapter Affairs" session (bottom right) was conducted by Chairman Beryl Price, A.I.A. Committee on Chapter Affairs

1955 A.I.A. CONVENTION: FAIR WEATHER AT MINNEAPOLIS

More than 1600 architects and their guests were registered at the Hotel Radisson headquarters in Minneapolis for the 87th annual convention of the American Institute of Architects June 20–24 — some 600 fewer than the total for the Boston convention last year. The Institute's first Minneapolis convention since 1916 was favored with perfect weather, generally amicable delegates and a larger-than-ordinary interest in the business side of the agenda — this last mainly because this was the convention at which revisions in Institute policy and procedures stemming from last year's report of the Committee on Organization were to be considered. Several changes were voted at this convention — many not requiring convention action already had been made by the Board and staff of the Institute — and others were presented and voted down. Still others await the results of further studies now in progress.

This was one convention at which the annual banquet provided the undoubted high point — the provocative and moving address in which the A.I.A.'s 1955 Gold Medalist, 70-year-old Willem Marinus Dudok, the noted architect and city planner of Hilversum, The Netherlands, called on American architects to "build more beautiful cities than ever before" as "perhaps the only people that can create a new and really great city planning art." Keynote for the entire convention was sounded in the opening address by architect and planner Albert Mayer of New York, who challenged the profession to *use* the same technology which has made jungles of our cities to transform them into human and beautiful as well as efficient environments for living. The two major convention seminars also developed the official convention theme, "Designing for the Community." (For more on speeches and seminars, page 9.)

Election Results

George Bain Cummings, F.A.I.A., of Binghamton, N. Y., is the new president of the A.I.A., elected without opposition to succeed Clair W. Ditchy, F.A.I.A., of Detroit after two years as national A.I.A. secretary. The main interest in the balloting at this year's convention was centered in the two offices for which there were contests. In these, John N. Richards, F.A.I.A., of Toledo was named second vice president over Hugh A. Stubbins Jr., of Lexington, Mass.; and Edward L. Wilson of Fort Worth was elected over Ross Shumaker of Raleigh, N. C., as secretary. Mr. Richards succeeds Howard L. Eichenbaum, F.A.I.A., of Little Rock, Ark., who was not a candidate for reëlection. Officers reelected without opposition were First Vice President Earl T. Heitschmidt, F.A.I.A., of Los Angeles, and Treasurer Leon Chatelain Jr., F.A.I.A., of Washington, D. C. All officers are elected for one-year terms.

The four regional directorships falling vacant at this convention all were filled without contests. The new directors (with the names of their predecessors following in parentheses) are: *New England* — Austin W. Mather, Bridgeport, Conn. (Philip D. Creer, Providence); *Western Mountain* — Bradley P. Kidder, Santa Fe (W. Gordon Jamieson, Denver); *New York* — Matthew W. Del Gaudio, New York City (C. Storrs Barrows, Rochester, N. Y.); *North Central States* — Bryant E. Hadley, Springfield, Ill. (Edgar H. Berners, Green Bay, Wis.). Directors' terms are three years, staggered so that only four of the 12 directorships are filled in any year.

This Year's Awards

Presentation of the Gold Medal to Mr. Dudok at the annual banquet was the climax of the week's long list of honors

(*Continued on page 12*)

Outside the major convention sessions: (top left) after Producers' Council award luncheon—four winners of Exceptional Merit Awards in Product Literature Competition, (far left) W. J. Hodge, L. C. N. Closer Inc., and Mort Dobbins, Detroit Steel Products, who accepted award for Acoustical Materials Association, and (far right) Hans Knoll, Knoll Associates, and Fred M. Hauserman, E. F. Hauserman Co., with P. C. President William Gillett (third from left), M. Edwin Green, F.A.I.A., Jury of Awards chairman, and P.C. Award winner Theodore I. Coe, A.I.A. technical secretary. (Bottom left) Opening of Products Exhibition, now a convention fixture. (Left center) Mr. Coe receiving his award. (Right center) Turpin Bannister gets the Kemper Award. (Top right) View of convention's opening luncheon in Radisson ballroom, where all major sessions were held. (Bottom right) PR Committee Chairman John W. Root, F.A.I.A., addresses chapter public relations chairmen and editors at breakfast meeting

NEW A.I.A. BOARD—(front row, left to right) Austin W. Mather, Bridgeport, Conn., New England regional director; Marcellus Wright Jr., Richmond, Va., Middle Atlantic director; Edward L. Wilson, Fort Worth, secretary; John N. Richards, Toledo, 2nd vice president; George Bain Cummings, Binghamton, N. Y., president; Earl T. Heitschmidt, Los Angeles, 1st vice president; Leon Chatelain Jr., Washington, D. C., treasurer; Donald Beach Kirby, San Francisco, Cal.-Nev.-Hawaii director; Matthew W. Del Gaudio, New York City, New York director. (Back row) Herbert C. Millkey, Atlanta, South Atlantic director; Bradley P. Kidder, Santa Fe, Western Mountain director; Bryant E. Hadley, Springfield, Ill., North Central States director; Albert S. Golemon, Houston, Texas, director; Frank N. McNett, Grand Island, Neb., Central States director; Waldo B. Christenson, Seattle, Northwest director; Raymond S. Kastendieck, Gary, Ind., Great Lakes director. Not pictured: Clyde C. Pearson, Montgomery, Ala., Gulf States director

All convention photos Robert R. Blanch

1. Thomas Broad, Dallas; Mr. & Mrs. Edgar Williams, New York; Mr. Ditchy; J. Lister Holmes, Seattle. 2. Penn State's architecture head, Milton Osborne, with Mrs. Osborne and the man-behind-it-all, A.I.A. convention manager Arthur Holmes. 3. West Virginia's Cy Silling and A.I.A. Past President Glenn Stanton of Portland, Ore. 4. Thomas F. Ellerbe, St. Paul; Oscar Lang, Minneapolis; Edwin Carroll, El Paso; and Frederick MacKie of Houston

1. G. Clair Armstrong, Minneapolis, host committee chairman; Roy Thorshov, Minneapolis; Arthur Lucas Jr., Duluth; Ralph Keyes, Minnesota A.I.A. executive secretary. 2. Two Henrys—N. C. State's design head, Kamphoefner, and A.I.A. *Journal* editor Saylor. 3. G. Homes Perkins, U. of Pa. architecture head; Prof. Walter Bogner, Harvard; New York A.I.A. President Robert Hutchins; Ralph Myers, Kansas City; Hugh A. Stubbins Jr., Lexington, Mass. 4. Albert Mayer with John Knox Shear, the RECORD's editor-in-chief

1. Kenneth Sargent, Syracuse U. architecture head, and John Magney of Minneapolis. 2. RECORD managing editor Emerson Goble (center) with San Franciscans Charles Masten Hurd, Mrs. Wendell Sprackman, John Lyon Reid and Mr. Sprackman. 3. A.I.A.'s new second vice president, John Richards of Toledo, with Mrs. Richards. 4. Roy F. Larson of Philadelphia; A.I.A. Administrative Secretary J. Winfield Rankin; and C. J. C. Carroll of Ottawa, secretary of the Royal Architectural Institute of Canada

1. Kansas U. architecture students Warren Bates, Jack Bloom, Gene Bockelman, Leo Williams, Gene Buchanan and Jim Hoefener. 2. U. of Minn. architecture dean Ralph Rapson with Mrs. Rapson and Leonard Currie, Bogota. 3. James Britton, Greenfield, Mass.; H. Judd Payne, RECORD publishing director; Mrs. Payne. 4. New York's new regional director, Matthew Del Gaudio, & Mrs. Del Gaudio; Daniel Schwartzman, New York; California-Nevada-Hawaii regional director Donald Beach Kirby, San Francisco

1. A.I.A. first v.p. Earl Heitschmidt, Los Angeles; Middle Atlantic regional director Marcellus Wright Jr., Richmond. 2. Los Angelenos Robert Alexander, Henry Wright and William Balch. 3. Leon Chatelain Jr., Washington, D. C., A.I.A. treasurer; Albert Larson, Minneapolis; Herbert Millkey, Atlanta, South Atlantic regional director, Mrs. Chatelain; Mrs. Larson. 4. A.I.A. retiring president Ditchy (left) and new president Cummings (right), with Thomas S. Holden, F. W. Dodge vice chairman

A.I.A. CONVENTION

(*Continued from page 10*)

recognizing achievement in architecture and in various allied fields. Also at the annual banquet, the traditional ceremony of advancement to Fellowship, given an added fillip this year because names of the new Fellows were not announced in advance, brought the coveted recognition to 42 more A.I.A. members. Names of the new Fellows are listed on this page. At the convention's opening luncheon, A.I.A. technical secretary Theodore I. Coe received the Producers' Council Award for service to the building industry. Most of the other honors were distributed at the Awards Luncheon, held on Thursday of convention week. These included the 1955 Honor Awards for Architecture, which had been announced in advance (AR, June 1955, pages 10–11 *et seq.*); the Edward C. Kemper Award for Service to the Institute — to Prof. Turpin C. Bannister, F.A.I.A., of the Department of Architecture, University of Illinois, Urbana, Ill., editor of "The Architect at Mid-Century," the final report of the A.I.A. Survey Commission on Education and Registration, published last year; the Fine Arts Medal — to Croatian sculptor Ivan Mestrovic (in absentia), the Croatian sculptor who is now teaching and working at Syracuse University; the Craftsmanship Medal — to calligrapher John Howard Benson of Newport, R. I. (in absentia); Honorary Fellowships to Charles Herbert Aslin, C.B.E., president of the Royal Institute of British Architects (in absentia) and Prof. Kay Fisker of the Royal Academy of Art, Copenhagen (in absentia); Honorary Memberships to C. D. Spragg, C.B.E., secretary of the R.I.B.A. (in absentia), poet-historian Carl Sandburg of Flat Rock, N. C. (in absentia), urban renewal administrator Hon. James W. Follin of Washington, D. C., and George B. Melcher, Flour City Ornamental Iron Works, Minneapolis. Also given at the Awards Luncheon were two special awards — an "Award of Recognition of an Organization for Distinguished Achievement in Architecture or Other Planning" to the Kohler Foundation, Inc., for the restoration of Wade House, Greenbush Village, Wis., and a "Citation of Honor" to the Reinhold Publishing Company of New York "for its work in producing, at considerable risk, the two-volume report of the Commission for the Survey of Education and Registration." Product Literature Awards (for list, AR, June 1955, page 220) were distributed, as well as Product Exhibition Booth Citations. These went to: Sparta Ceramic Company, Sparta, Ohio, and U. S. Ceramic Tile Company, Canton, Ohio; American Gas Association, New York City; American Hardware Corporation, New Britain, Conn.; Armstrong Cork Company, Lancaster, Pa.; Hough Shade Corporation, Janesville, Wis.; Anderson Corporation, Bayport, Minn.; Inland Steel Products Company, Milwaukee; and Kawneer Company, Niles, Mich.

Honors for Teachers

Contributions to the profession of architecture through effective teaching were recognized in a series of awards new this year — citations presented by the A.I.A. College of Fellows to the following educators: Prof. Hubert E. Baxter, Cornell, teacher of descriptive geometry and structural design; Prof. Herbert L. Beckwith, M.I.T., teacher of design; Prof. John Rex Cunningham, Oklahoma A. & M., teacher of design; Prof. Paul Grillo, Notre Dame, teacher of design; Prof. Paul Hefferman, Georgia Tech, teacher of design; Prof. Raymond W. Jeans, University of California, teacher of design; Prof. Jean Labatut, Princeton, teacher of design; Prof. Newton D. Morgan, University of Illinois, teacher of structural theory and design; Prof. Wilbert C. Ronan, Ohio State, teacher of architectural history and the decorative arts.

In four tightly scheduled morning business sessions characterized by remarkably little dissension, delegates approved a 47-page Board report (printed and distributed to the entire A.I.A. membership in advance of the convention this year for the first time) and disposed of ten amendments to the bylaws proposed by the Board and 11 resolutions proposed by various chapters.

Public Relations and Dues

Although they approved an expanded three-year public relations program as outlined by Public Relations Committee Chairman John W. Root, F.A.I.A., of Chicago, delegates refused a bylaw amendment proposed by the Board to help finance it which would have raised by $10 the annual dues of all members paying less than the corporate maximum of $50 a year. However, they accepted another proposed amendment continuing the corporate maximum at $50 and raising the minimum for corporate members who certify their incomes are under $6000 a year from $25 to $35. A.I.A. treasurer Leon Chatelain Jr. estimated that this action, together with another freeing some funds previously allocated to contributions to delegate expenses, would make it possible to raise the public relations budget to $75,000 in 1956; this compares, he said, with a $50,000 budget this year, and with the $95,000 budget envisioned if the Board's amendment to raise all but maximum dues had passed. The corporate maximum was raised $10 to $50 in 1952 and this increase is still the cornerstone of the public relations budget; other than corporate dues do not include a sum specifically earmarked for the program.

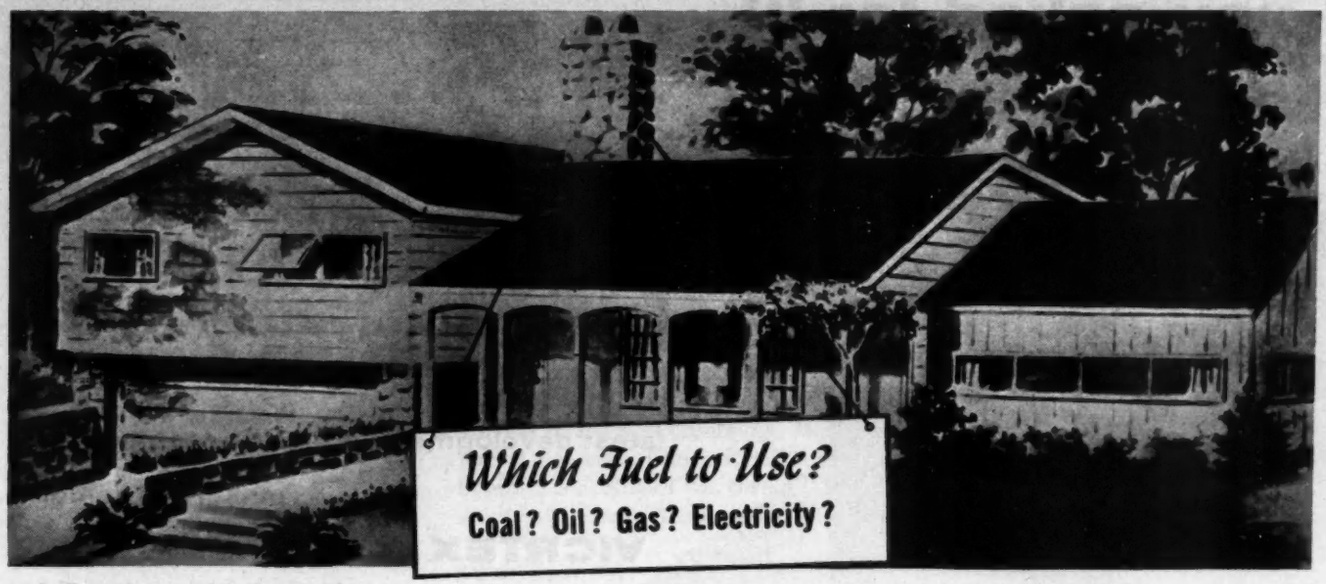
Architects' Pix and Ads

One of the liveliest discussions of the convention preceded approval of a resolution presented by the Board permitting the use of architects' portraits in

(*Continued on page 268*)

THE NEW FELLOWS

Robert Evans Alexander, Los Angeles—Design.
George Boggs Allison, Los Angeles—Design.
Harris Armstrong, Kirkwood, Mo.—Design.
Donald Barthelme, Houston—Design.
Walter Francis Bogner, Cambridge, Mass.—Education.
Ernest Born, San Francisco—Design and Public Service.
Frank A. Childs, Chicago—Design.
Anthony Salvatore Ciresi, Cleveland—Design.
Hervey Parke Clark, San Francisco—Design.
Elisabeth Coit, New York—Literature and Public Service.
Harry Francis Cunningham, Lincoln, Neb.—Education and Public Service.
William Henley Deitrick, Raleigh, N. C.—Design.
John Cobb Dennis, Macon, Ga.—Service to the Institute.
Howard Samuel Eichenbaum, Little Rock—Service to the Institute and Public Service.
Louis McLane Fisher, Baltimore—Design.
Noel Leslie Flint, Chicago—Design.
Raphael N. Friedman, Chicago—Public Service.
Philip Hubert Frohman, Washington, D. C.—Design.
Frederick G. Frost, Jr., New York—Public Service.
Lister J. Holmes, Seattle—Design and Public Service.
Thomas Worth Jamison, Jr., Baltimore—Public Service.
Karl Fred Kamrath, Houston—Design.
Oscar Theodore Lang, Minneapolis—Design.
Ernest Langford, College Station, Tex.—Education and Public Service.
Arthur Mann, Hutchinson, Kan.—Service to the Institute and Public Service.
Lloyd Morgan, New York—Design and Education.
Charles M. Nes, Jr., Baltimore—Design.
Ernest Pickering, Cincinnati—Education.
Igor Boris Polevitzky, Miami—Design.
Andrew Nicholas Rebori, Chicago—Design and Education.
John Lyon Reid, San Francisco—Design and Education.
John Noble Richards, Toledo—Public Service.
Isidor Richmond, Boston—Design.
Louis Rossetti, Detroit—Design.
Donald Kenneth Sargent, Syracuse, N. Y.—Design and Education.
Dewey Anderson Somdal, Shreveport, La.—Design, Service to the Institute and Public Service.
Leonard Adrian Waasdorp, Rochester, N. Y.—Public Service.
E. Todd Wheeler, Wilmette, Ill.—Public Service.
Julian H. Whittlesey, New York—Design.
Fred Talbott Wilson, Houston—Design.
Samuel Wilson, Jr., New Orleans—Design, Education, and Literature.
Henry Lyman Wright, Los Angeles—Service to the Institute.



Even wood is still appropriate—in a cheerful fireplace; or charcoal in an outdoor grill. But for winter warmth, what fuel gives most comfort at least cost?

For summer coolness, shade trees are often relied on; also water evaporating on roofs. Electricity is widely used to operate mechanical cooling systems. How can its cost be reduced?

The problem is to find the fuel subject to the least loss in Btu's from Radiation, Convection, Conduction, and Vapor Flow. These four are responsible for *all* heat loss, regardless of what fuel is used or how heat is supplied.

Through wall, ceiling and floor *spaces*, the greatest amount of heat loss is by *radiation;* up to 55% for Up-Heat-Flow, 80% for Wall-Heat-Flow, and as much as 93% for Down-Heat-Flow. Little heat is lost by *conduction* through building spaces because air has slight density. *Convection* accounts for up to 45% of Up-Heat-Flow, about 25% for Wall-Heat-Flow, and Zero for Down-Heat-Flow because there is no downward Convection.

WHICH FUEL TO USE?

In the case of Radiation, regardless of the kind of fuel, heat loss is reduced by *multiple* accordion *aluminum* as each sheet successively *reflects* Radiation or heat rays back in the direction of the source at a high 97% rate, absorbing them at a low 3% rate, and emitting heat rays at a mere 3% rate.

The 3 or 5 sheets of aluminum and fiber partitions effectively retard outer and inner Convection, also regardless of the kind of fuel. Since their 4 or 6 layers of air spaces have slight density, heat loss by Conduction through them is also slight.

1,060 Btu's are lost with each pound of vapor which flows out of a building, enough to raise by 20° F the temperature of 2 rooms, 8 feet high, 13 by 14 feet in size. Thick, continuous aluminum foil, 375 feet to 750 feet long (which means mighty few breaks for infiltration of vapor), has almost *zero* permeability to vapor flow. Under its flat stapled flanges, infiltration is slight.

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*Patent applied for.

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☐ Heat ray reflectivity table.

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A.S.L.A. MEETS IN DETROIT FOR THREE DAY CONFERENCE

The American Society of Landscape Architects selected Detroit as the site for its 56th annual meeting, held June 27–29 at the Sheraton-Cadillac Hotel.

Arleigh C. Hitchcock, executive director of the projected Homestyle Center Inc., reported to the delegates plans for the $2 million housing research village being built at Grand Rapids by a Grand Rapids civic group and the National Association of Home Builders. The purpose of the village, Mr. Hitchcock said, will be "to inform the consumers, architects, interior designers, landscape architects, builders, manufacturers and suppliers interested in the home industry, and to raise the level of homes by researching and displaying the better design solutions, material combinations, structural methods and equipment that is available, or is in the experimental stage." The project, which is to include 25 display homes the first year, is scheduled to open in January of 1957.

The society awarded prizes in seven categories at its annual exhibits: for site planning — Harland Bartholomew & Associates, St. Louis, for Radford Terrace, Pearl Harbor; landscape planting — Eleanor Roche, Detroit, for the McMillan garden, Grosse Pointe, Mich.; estate layout — Raymond E. Page, Beverly Hills, for the Hills estate; civic center planning — Eugene R. Martini and Associates, St. Louis, for the Brown Shoe Co., Clayton, Mo.; public buildings — Simonds and Simonds, Pittsburgh, for Moon High School, Allegheny County; and city planning — the City of Grand Rapids, Mich., for Mulick Park.

Delegates reelected Leon Zach, Washington, D. C., to the presidency. New officers include: Arthur G. Barton, Glendale, Cal. — vice president; Hubert B. Owens, Athens, Ga. — secretary; and Norman T. Newton, Cambridge, Mass. — reelected treasurer.

Three new fellows to the society were also announced at the conference: Thomas H. Jones, of Cambridge, Mass.; Karl B. Lohmann, University of Illinois, Urbana; and Hubert B. Owens, University of Georgia, Athens.

SCHOLARSHIP ESTABLISHED AT NEW JERSEY CONVENTION

Delegates to the 55th annual joint convention of the New Jersey Society of Architects and the New Jersey Chapter of the American Institute of Architects elected to allot $10,000 from their general funds toward a scholarship in honor of their late president, J. Raymond Knopf. The scholarship fund, which will be distributed as loans rather than as grants, will be augmented by voluntary contributions from individual members.

Other highlights of the three-day conventions, which drew a record registration of 671 to the Berkeley Carteret Hotel in Asbury Park on June 9–11, were the three daily seminars. On the first day, a panel, moderated by Marcel Villanueva, A.I.A., and consisting of Oskar Stonorov, A.I.A., David M. Walker, Regional Director of the Housing and Home Finance Agency, and Arthur D. McVoy, Director of the Department of Planning for Baltimore, discussed "Urban Restoration." The second day's seminar, on the "Esthetic Sense of Architecture," was moderated by Seymour Williams, A.I.A., and discussed by Percival Goodman, A.I.A., and John Knox Shear, Editor-in-Chief of ARCHITECTURAL RECORD. In the final seminar, "Architects of Tomorrow," the difficulties faced by young architects were covered by Charles E. Krahmer, A.I.A., of the New Jersey State Board of Architects, and Simion Gulamerian, of the office of Paul Drake; the moderator was Neil J. Convery, A.I.A.

The major speaker at the architects' banquet was Roger Allen, F.A.I.A., of Grand Rapids, Mich.

No awards were made at this year's architectural exhibition; the convention committee had decided against them in an effort to induce a greater number of members to submit designs.

Delegates elected Romolo Bottelli Jr. to complete Mr. Knopf's unexpired term as president. Other new officers elected at the convention included Frederick A. Elsasser, first vice president; D. A. Hopper, Jr., second vice president; Eugene M. Dennis, treasurer; and Jacob Shteir, secretary.

NEW JERSEY A.I.A. officers at their convention banquet: (from left) Jacob Shteir, secretary; Frederick A. Elsasser, first vice president; Romolo Bottelli Jr., president; D. A. Hopper Jr., second vice president; Eugene M. Dennis, treasurer. (Below) Speakers on the "Esthetic Sense of Architecture" seminar, looking suitably serious: RECORD *editor-in-chief John Knox Shear, A.I.A., and Percival Goodman, F.A.I.A.*

— *Drawn for the* RECORD *by Alan Dunn*

"How do you ever expect her to keep a beau if you insist on living in the open plan!"

WHAT KIND OF CRITICISM HAS CONGRESS HEEDED IN

This Congressman, a Former Bricklayer, Asserted Design Is "Not American," Warned Against Use of Such "Experimental Materials" as Glass and Metal

(From *Congressional Record — Appendix*)

EXTENSION OF REMARKS

OF

HON. JOHN E. FOGARTY

OF RHODE ISLAND

IN THE HOUSE OF REPRESENTATIVES

Monday, June 20, 1955

Mr. FOGARTY. Mr. Speaker, my office has received a number of protests concerning the design of the new Air Academy as made public by the Air Force several weeks ago. Investigation of the situation leads me to bring this matter before the House. Unless Congress calls a halt to the present plans of the executive department, it would appear that the Secretary of Air and the Air Force are about to make a serious mistake, one with which we would have to live for many years.

Establishment of a national Air Academy as the Air Force counterpart of West Point and Annapolis was the lifelong dream of the late Gen. Billy Mitchell. This dream moved close to reality last year when Congress authorized an expenditure of $126 million for this purpose. Subsequently, the Air Force appointed as Air Academy architects a Chicago architectural firm which designed the Lever Brothers glass building in New York and a number of industrial structures throughout the country. The firm, Skidmore, Owings & Merrill, was appointed to design the Air Academy, coördinate the engineering services, and supervise construction. On May 14, models of the design were unveiled at Colorado Springs, Colo., the site of the new Academy.

What was seen by the congressional observers and the press caused considerable consternation. A spontaneous protest by churchmen throughout the Nation caused the Air Force to withdraw almost immediately the design for the chapel. This glass-and-metal creation was described variously as an accordion lying on its side and a line of telescoped Indian tepees. Outside this tin building, hanging from a metal rack in the fashion of the ice cream wagon we see in summer, were the church bells. The whole business sat on a terrace which one architect said was Egyptian and another said originated with the Incas.

The balance of the plan has not been altered, we are told. The over-all plan consists of a number of glass, aluminum, and steel buildings on stilts. When he first saw the design, Representative HARDY, of Virginia, commented that it looked like a cigarette factory. Congressman HARDY proved to be something of a prophet, because only a few days later, Frank Lloyd Wright, the famous architect, declared flatly that the Air Academy design is a violation of nature. He predicted that the Air Academy, if built as planned, would become known — not as the national shrine it should and must be — but as Talbott's aviary and a factory for birdmen. Mr. Wright said in a letter which was published in the Colorado Springs Free Press of May 27:

"The Air Force Academy looks to me as if another factory had moved in where it ought not to be."

Since that time, there seems to have been considerable confusion. According to the Air Force's Public Relations Department, work on the Air Academy is to begin this summer. Yet, Secretary of Air Talbott has been quoted in the press as saying the design is not yet in its final form.

My purpose in discussing this subject today is to urge its revision — in its entirety — for two basic and most important reasons. They are quite simple: First, the design is not American in conception and is unworthy of the tradition of this Nation; second, the taxpayers should not be saddled with an initial cost of $126 million for construction of the Academy and its supporting facilities, and heaven knows how much more for maintenance over the years, to build a monument to experimental materials.

Let us take these points one at a time.

The Air Academy should be a national shrine, as are the historic buildings of West Point, and the Naval Academy in Annapolis. Like its Army and Navy counterparts, the Air Academy should reflect our Nation's origins, its culture, represent its teachings, and symbolize its humanity. It should have warmth, and beauty, and an atmosphere of American history. The Air Force has stated publicly that, besides teaching our future airmen mechanical skills, its duty is to inculcate unimpeachable character, an unflagging sense of duty, and devotion to the best interest of the Nation.

Instead, we have a design and choice of materials reminiscent of a cafeteria. A knowledge of architecture is unnecessary in sensing the faults of this plan. It is difficult to find any trace of American heritage in the cold, impersonal, and mechanical appearance of these buildings. Several leading architects who studied the drawings and photographs of the models made several interesting observations. What they said can be compressed into two sentences. The design is not American. It is based on a hodgepodge of European and Near Eastern influences, and not even the best of those. When you examine the models, you find the Egyptian or Near Eastern terraces. The senseless elevation of everything on stilts, I am told, was popular in Europe — particularly in Germany — during the 1920's, but has since been discarded as outmoded.

The cold surfaces and lack of decoration follow the fad we have seen expressed principally in New York City. Last April, Bishop Fulton J. Sheen, commenting on so-called modern architecture, described the United Nations building and the new glass and metal buildings on Park Avenue as — and I quote — "illuminated cracker boxes or elongated shoeboxes on stilts." One of the Air Academy designers stated in unveiling the models that his was a timeless design and will be good 100 years from now. He is a brave man, and a wise one, too, to look so far into the future and tell us what it holds.

I wonder if some of our so-called modern architects, back in the days of the Civil War, were not saying the same sort of thing about the jigsaw architecture which became a craze for a brief span. You may remember the jigsaw architecture — the odd-looking cutouts and

(*Continued on page 304*)

DEBATE OVER AIR FORCE ACADEMY DESIGN CONCEPT?

Lay Critics Said It Wasn't Traditional; Wright Said He Had a Better Design

On July 14 the House of Representatives voted to refuse construction funds for the United States Air Force Academy. It did so on the recommendation of its Appropriations Committee, which felt "it would be most unwise to provide funds for construction until the design is more firmly established." The Committee added, "The new Academy should reflect the best traditions in American architecture; the design should inspire the confidence and respect of the American people." The Congressmen who were publicly quoted on the subject left little doubt that in their minds "modernistic" design could hardly achieve this. The only witnesses in addition to representatives of the Air Force and their architects to testify at Appropriations subcommittee hearings on the subject were Frank Lloyd Wright (see page 32A), who said he had a much better design "in the back of my head"; Adin M. Downer, legislative counsel, Veterans of Foreign Wars of the United States ("the proposed design does not reflect American history and tradition"); and Henry Hope Reed Jr., writer and member of the Municipal Art Society of New York ("our Jeffersonian tradition is the only one which offers a style so broad as to admit the best we can do in the arts, and to give room for history and memorials").

To introduce some "expert testimony" into the public discussion, the RECORD invited comments on one Congressman's views (across-page) from the president of the American Institute of Architects, a leading architectural historian, and the president of the Producers' Council, Inc. Mr. Wright, who is quoted in the speech, was also invited to comment.

Professional Views Sought by the RECORD

From the American Institute of Architects came a copy of a statement sent earlier to Secretary of the Air Force Harold E. Talbott:

It was called to the attention of The Board of Directors of The American Institute of Architects at its recent meeting held June 25th in Minneapolis, Minnesota, that the design for the proposed Air Force Academy for the United States, Colorado Springs, Colorado, is receiving a certain amount of adverse criticism and that this criticism has been widely publicized.

In view of the importance of this project historically and architecturally and in view of its significance to the American people, The Board of The American Institute of Architects felt it should state The Institute's position with respect to the engagement of and confidence in American architects. The Institute believes that matters of principle and policy are involved.

In arriving at a selection of architects and architect consultants for the design of this important work, the Secretary of the Air Force followed ethical and objective procedures that were in the public interest.

The architects and architect consultants selected by the Secretary of the Air Force are among the most distinguished of American practitioners. Their experience is extensive, their reputations are world-wide and the buildings and projects to their credit are among the most significant productions of the American professionals. It is understandable that any structure or work of art will find itself the target of criticism, sometimes voiced without a knowledge of the problems involved. Design is best accomplished by men who are trained and experienced. There is no question of the experience and ability of the professionals engaged by the Department of the Air Force.

The United States of America now leads the entire world in the excellence and progress of architectural design and construction techniques. The Department of the Air Force has chosen its architects through proper and ethical methods.

The American Institute of Architects is firmly convinced that the commissioned architects should continue with the further development of their plans and the Department of the Air Force should proceed with confidence knowing that the final result will be in the best interest of the American people.

The following statement is the response from Prof. Hugh Morrison of the Department of Art and Archaeology at Dartmouth College, a director of the Society of Architectural Historians and author of the book* Early American Architecture, *a standard reference in its field.

Representative Fogarty has made a skilful and plausible attack on the proposed design for the Air Force Academy at Colorado Springs. His chief point is that "the design is not American in conception and is unworthy of the tradition of this Nation." He seeks "an atmosphere of American history," comparable to that which he claims for the buildings of West Point and Annapolis.

As an historian of American architecture I am deeply disturbed by such an erroneous conception of architectural tradition.

All great ages have created architectural beauty in their own way and expressive of their own day. The succession of past architectural styles — Greek, Roman, Gothic, etc. — affords ample proof that while architectural beauty is permanent, it is not permanently the same. We admire the Parthenon and Chartres Cathedral, but too often forget that in their day they were daringly modern buildings.

The age which produced the U. S. Capitol had been immersed in several generations of a "classical" wave of style. It found itself unable to escape completely from these European precedents, yet it is clear that the great men sought to express a distinctively American spirit. Jefferson, behind his classical columns, was searching "the course of a nation looking far beyond the range of Athenian destinies." Latrobe, Jefferson's friend and a designer of the Capitol, strove valiantly to create an "American order."

Robert Mills, architect of the Washington Monument, the Patent Office and many other Federal buildings, aspired to an American beauty which he did not himself yet know how to create. "I say to our artists," he proclaimed, "study your country's tastes and requirements, and make classic ground *here* for your art. Go not to the old world for your examples. We have entered a new era in the history of the world; it is our destiny to lead, not to be led. Our

(Continued on page 18)

(*Continued from page 17*)

vast country is before us, and our motto *excelsior*."

Horatio Greenough, creator of the great statue of Washington, wrote feelingly: "I contend for Greek principles, not Greek things. . . . The men who have reduced locomotion to its simplest elements, in the trotting wagon and the yacht *America*, are nearer to Athens at this moment than they who would bend the Greek temple to every use." What new architectural inspiration might he not have found in the swift lines of modern planes?

Shall we, more than a century later, urge *imitation of the superficial forms of the past rather than work in the creative spirit of that past*? Shall we, with enormously greater advantages in knowledge and in technique, be less bold in vision than our forebears?

They told us clearly that by being ourselves we can best become great. European critics for the past half century have regarded our modern architecture as the only distinctively American style we have produced.

Mr. Fogarty fails to perceive the truly classic and enduring qualities of the proposed design for the Air Academy. Set on a series of rising plains high in the Rockies, and ascending to an impressive "acropolis," these buildings have a clean-cut, quiet and simple beauty that echoes the serenity of the Parthenon — and yet is American, not Greek.

He disparages them as "cold, impersonal, and mechanical" and deplores their lack of decoration. But what better decoration than the warmth and color of plants and flowers against these spacious terraces, what better ornament than the glistening glass walls, adorned by dark reflections of the great mountains and the shifting images of clouds and sky?

Preserve us, in this day, from going back to the knights-in-armor architecture of West Point. Impressive indeed are the frowning ramparts above the Hudson, but they speak of the age of Coeur de Lion and Godfrey de Bouillon. Cannot we speak, in dynamic modern beauty, of the realities and ideals of America in the air age? Tradition is of value only when it is behind us, pushing forward.

From William Gillett, president of the Producers' Council Inc., the major association of U. S. building materials manufacturers:

You have invited comment on the recent remarks in the Congressional Record by the Honorable John E. Fogarty of Rhode Island on "American Architecture and Building Materials".

Architectural styles of buildings, like art of all kinds, can evoke pro and con arguments and there are many in this land who will speak highly of the proposed design for buildings of the United States Air Force Academy. Regardless of the architecture selected, there will be a division of public opinion as to whether or not the appearance of the completed academy is appropriate. The same argument will hold as to the appropriateness of the choice of materials to be used. To say it is obvious that "Glass and metal, of course, are alien to American monumental design — even to European" is not too evident in the architectural effect gained by many architects in today's building designs.

If confidence is to be placed in our excellent American building designers then we should leave to them the choice of design as well as the choice of materials to carry out that design. If on the other hand debates are to be carried on in Congress to affect the choice of design and materials, it will cause endless discussion in which, by rights, proponents of all kinds of construction should be heard. This procedure would obviously delay the Air Force Academy for an indefinite period. If our capable architect President, Thomas Jefferson, is to be exemplified as furthering American art and architecture, it should be remembered that he tried many new things and through such trials made numerous contributions to American architecture. Why should we not further our American building art with new ideas?

Wright: "Mr. Fogarty Does Not Go Far Enough"

With Congressman Fogarty's criticism of the design for the Air-Force Academy, which I have just read in the Congressional Record, I agree almost entirely. But Mr. Fogarty does not go far enough. The scheme for the Academy now presented wholly ignores the great opportunity afforded American architecture by the noble character of the site and has no feeling whatsoever for the nature of the occasion. I suppose this is to be expected because expedient government would choose expedient architecture as expedient for the purpose. But what may be tolerated as an urban poster for soap is not tolerable as inspiration for the youth of America. This type of standardization in commercial architecture has already shown severe limitations now so clearly manifest in the mental confusion of this Academy Air-Force design. To execute it would only be to build into our national future a confession of the failure of the vital spirit of America. Our country has a spirit. We cannot afford to credit — much less build-in — any such victory of publicity-managed commercialism as this already dated cliché represents. These "composites" now omnipresent in the practice of Architecture should never be trusted with a concept. Their function is at best executive. Confine them there.

This exploitation would not only disgrace but establish a future spiritual and technical stumbling-block for the American spirit. The very expediency it exemplifies is bound, sooner or later, to defeat — as it has here overshot — itself. We have seen this sort of thing coming along for some time. On the record now is this depression of the greatest of the arts by planned expediency. But, that an already dated version of the cliché should become national, though feared, was hardly to have been expected. A fresh start with a worthy concept is now salvation but highly improbable: the great opportunity has been sold. Where the honor of a Nation is thus at stake a nominally paid competition is the only moral proceeding: say one hundred thousand dollars offered to no more than several architects selected for past experience in creative achievement (I should myself like to be one of them to show how practical American architecture, inspired by the site, could be) and these men be invited to submit their several schemes, in sufficient detail, to a proper tribunal composed (certainly not of already lost experts and specialists) but to the as yet unconditioned minds of American youth, say those now in the high-schools of these United States: the several designs to be incorporated in a suitable brochure and submitted to high-school principals to enable students to vote their preference. This Air-Force Academy will be theirs, for better or for worse. The Democratic process might be worth while. It would be educational at least. For all concerned?

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MARSHALL SHAFFER LAUDED AT CONVENTION OF A.I.A.

The American Institute of Architects paused in the crowded final session of its 87th annual convention in Minneapolis to pay tribute to a great friend of architects, the late Marshall A. Shaffer, chief of the Technical Services Branch of the U. S. Public Health Service Division of Hospital Facilities. The appreciation was read by Wilbur A. Tusler, F.A.I.A., of the Minneapolis firm of Magney, Tusler & Setter. Only four years earlier, at the A.I.A.'s Chicago convention, Mr. Shaffer had received the Edward C. Kemper Award for Service to the Institute; the citation noted that he "insured the conduct of the hospital building program of the U. S. Public Health Service in accordance with the highest ethical standards of the Institute and thus secured for the public the greatest benefit from the service rendered by its architects."

Mr. Shaffer, who died unexpectedly on May 25 at his home in Wheaton, Md., at the age of 55, had headed architectural and engineering phases of the Public Health Service hospital construction program since 1941. With the launching of the Hill-Burton hospital construction program in 1946, his office became a research center for architects working on hospitals financed under the program; planning guides and criteria developed under his direction have by now become basic planning tools for any architect designing a hospital. These studies, and their application and architectural results, have been reported in ARCHITECTURAL RECORD's Building Types Studies on hospitals over the last several years; the material on public health centers in this issue is another installment.

As a bureaucrat, Mr. Shaffer was an unusual breed. He was responsible for approving designs for hospitals financed with Hill-Burton aid all over the country; actually he delegated this responsibility to local and regional offices whenever possible. He kept his Washington staff small and specialized. He encouraged state and local authorities to employ local architects in the design of Hill-Burton projects, and furthermore made it practicable by seeing to it that the necessary technical information was easily accessible to them. He wanted to be a catalyst rather than an oracle, although in the end he was that, too, almost in spite of himself.

Mr. Shaffer's consuming interest was better hospitals for the nation; his pursuit of information which might contribute to that end was passionate, unceasing and altogether exhausting to the observer. Hundreds of hospital architects and administrators from all over the nation — and all over the world — came to his office; they normally went away staggered — but immensely stimulated — by his compulsive energy, his restless, probing imagination and the enthusiastic gallop at which his conversation pursued it (often leaving the visitor far behind).

Mr. Shaffer was born in Hamilton, Ohio, and graduated in engineering from Pennsylvania State College in 1922. He worked as an engineer for several years before arriving in California to do graduate work in architecture and private practice for some years. There followed three years in Chicago — architectural practice and graduate study in the social sciences at the University of Chicago. Then New York; more private practice and lecturing in design at Pratt Institute. Finally, Washington.

Mr. Shaffer was a member of the A.I.A. and of the American Hospital Association. In 1952 he was American delegate to and president of the hospitals section of the Eighth Panamerican Congress of Acrhitects in Mexico City.

MAGNEL WAS EARLY ADVOCATE OF PRESTRESSED CONCRETE

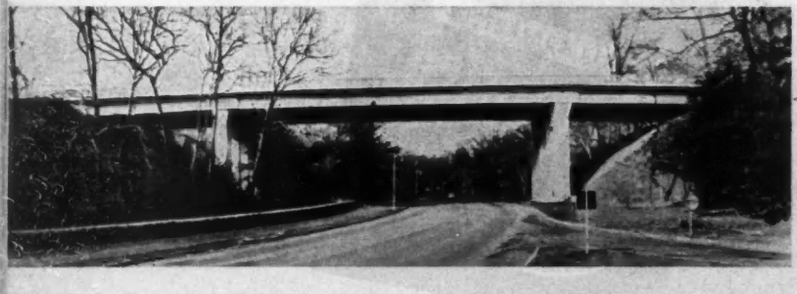
Gustave Magnel, the inventor of the Belgian system of prestressing concrete and proponent of the potentialities of that material, died July 5 at Ghent at the age of 65.

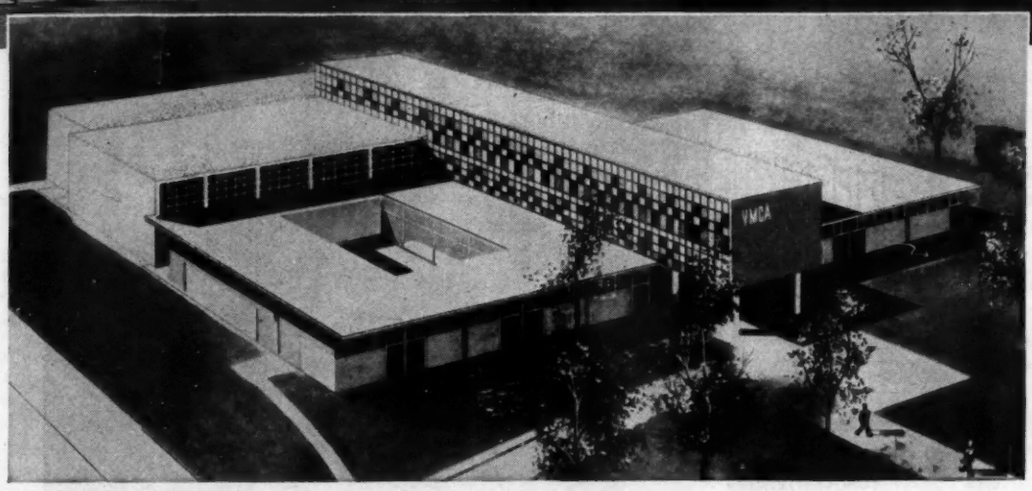
Professor Magnel, whose book *Prestressed Concrete* was considered one of the major works on this subject, had been professor of civil engineering at the University of Ghent since 1937.

Professor Magnel was one of the founders of the Belgian organization SECO — le Bureau de Contrôle pour la Securité de la Construction en Belgique. A cooperative society set up by the Union of Professional Organizations of Contractors, Architects and Civil Engineers, SECO undertakes to insure builders against their liabilities, with SECO having control over the engineering of the structure: to check calculations, drawings, etc.

In an address before the Concrete Industry Board in New York in February of last year, Professor Magnel delivered some observations on American problems in using prestressed concrete which he had gathered during a tour of the United States and Canada and from his work on the Walnut Lane Bridge in Philadelphia, one of the first major structures to be built of prestressed concrete in this country (see cuts below). Among these observations he deplored particularly the lack of high strength, no-slump concrete. He also blamed the inflexibility of U. S. building codes for the country's lag in developing the technique.

Among Professor Magnel's last projects was a radio-television-meteorological tower to be built for the Brussels World's Fair in 1958. Its proposed height of 2083 ft will make it, if it is built, the tallest structure in the world.





Top illustration, MEN'S DORMITORY, SOUTHERN STATE COLLEGE, Magnolia, Ark. Architects: Wittenberg, Deloney & Davidson, Little Rock, Ark. Contractors: Peterson, Garbi & Joseph, Inc. Lupton Curtain-Wall System, Type H. Module 3'8". Fixed glass and projected in-at-top ventilators. Outside glazed.

Lower illustration, Y.M.C.A. BUILDING, CHESTER, PA. Architects and Engineers: Howell Lewis Shay & Associates, Philadelphia. Contractors: Nason & Cullen, Inc. Lupton Curtain-Wall System, Type H. Module 3'. Projected out-at-bottom ventilators. Opaque and insulated panels with porcelain enamel facing.

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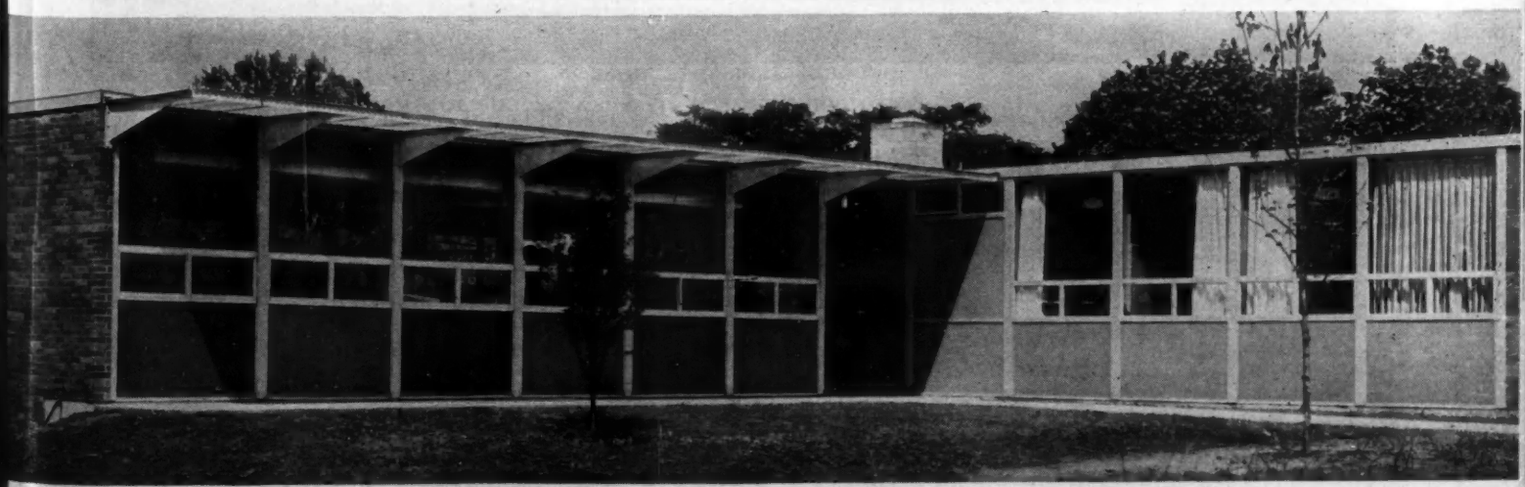
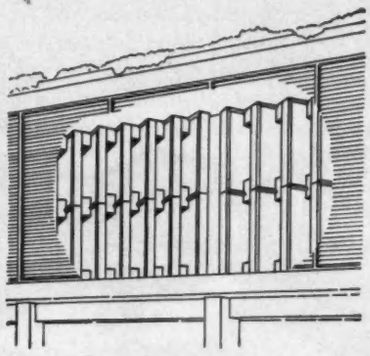
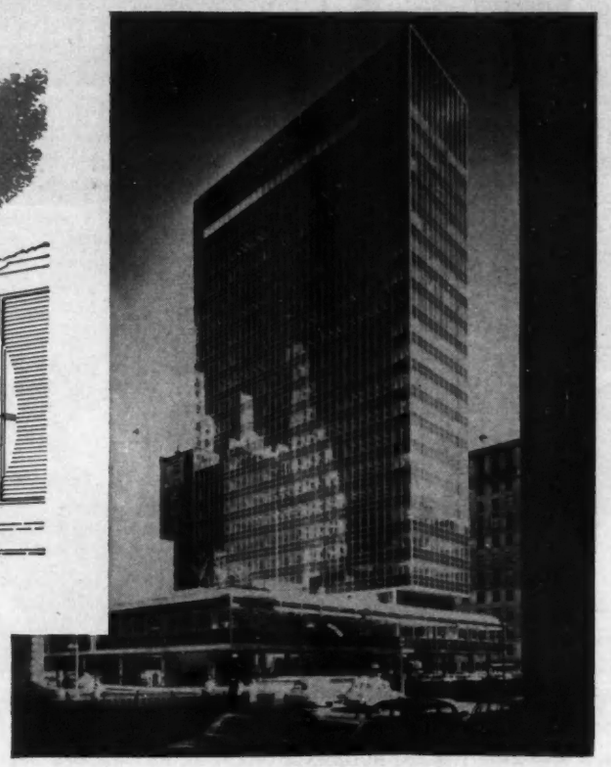


Solution... to air conditioning problems

Baffles and resonators effect efficient silencing of fan noise



A noise problem common to many air conditioning systems has been solved successfully in the beautiful new Lever House building in New York. Industrial Acoustic Company, Inc., installed the sound silencing system in the large air intake opening on the second floor of the building. The intake opening measures more than 1000 square feet in cross section. To bring about top silencing efficiency, the intake silencer was constructed of both high and low acoustic baffles fabricated of perforated metal and sound-absorbing materials of suitable density and thickness. The result is a highly efficient silencing of fan noise.

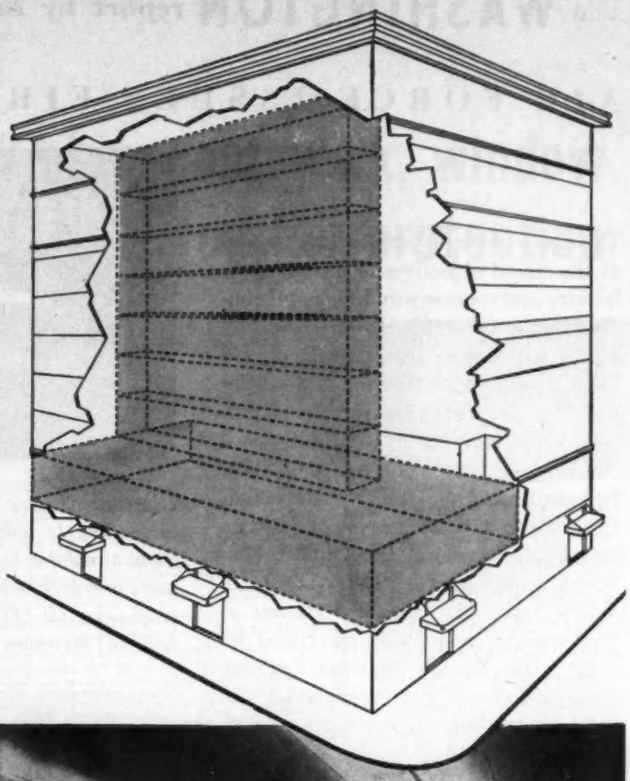


Air conditioning application helps cut over-all height of new building ...helps create low, modern lines

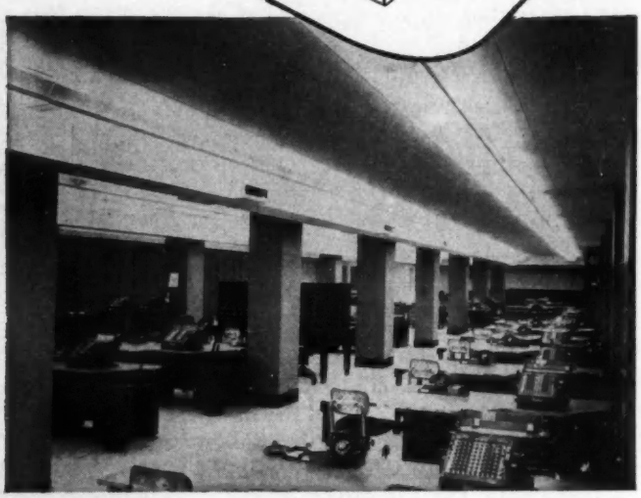
How to cut the over-all height of a new building and still find space for air conditioning ducts was the problem faced by the National Bank of Detroit. Through the use of open web steel joists, small, high-velocity air conditioning ducts were run through the joists whenever they met at right angles. The ducts were then completely enclosed in the ceiling construction. As a result, the height of the building was cut by two feet, creating low, modern lines and effecting a substantial saving in construction costs.

Diffusers and sound attenuation by the Anemostat Corporation of America.

Complete air conditioning system increases available floor space more than 29%



Getting more usable space in their already cramped building was the situation which confronted the Wachovia Bank and Trust Company, Winston-Salem, North Carolina. Installation of a complete air conditioning system gave the bank an increase of more than 29% of available floor space in their 44-year-old, 8-story main office building. On the ground floor they made two floors out of one. The high-ceiling ground-floor banking area was cut in half horizontally by construction of a new second story. The conventional light and air shaft was floored over. This added approximately 1000 square feet of additional floor area per floor. All of the main banking area (picture below, left) has been air conditioned. The transit, bookkeeping and proof departments (picture below, right) were combined and relocated in new quarters on the mezzanine. Area marked in blue shows floor-space gains.



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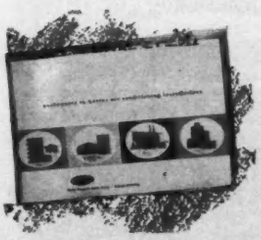

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a **WASHINGTON** *report by Ernest Mickel*

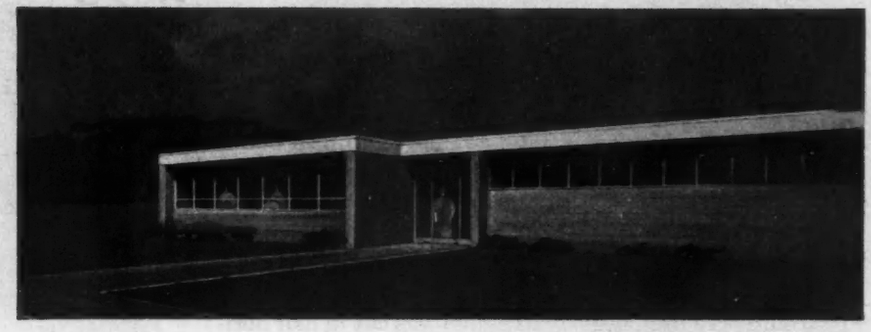
AIR FORCE ISSUES FIRST OF NEW DEFINITIVES

The cause of better architecture as well as the stated objectives of increased efficiency and economy in design and construction seems likely to be served by new and revised "definitive drawings" for United States Air Force facilities which are emerging from a special program set up recently in the Architectural Branch of the Assistant Chief of Staff, Installations, HQ USAF. New definitives, which have been developed by two private architectural firms under contract with the Air Force, offer a far more detailed set of planning criteria, in terms of functional and structural requirements for the various building types, than those they are replacing; the intent is to eliminate duplication of effort formerly inherent in the need for supplemental research on similar facilities by field agencies and architect-engineer contractors; the result should be better guidance for architects undertaking Air Force work. There is, if anything, an increased emphasis on the opportunity for architectural initiative and design ingenuity in the adaptation of the basic schemes to local site, climate and culture.

The first of the new definitives, sent out in sheet form as soon as each set is approved, have already reached the Air Force construction agencies for projects under their jurisdiction. The present program calls for completion of the revised presentations for approximately 72 types of facilities by early fall; and the Air Force expects to continue the work of revision until all of its required facilities have been "reworked" in accordance with the new methods.

In its present approved form, a typical set of definitives may include in the original four 40- by 28-in. sheets, distributed in half and quarter sizes, of which the first gives the functional layout along with section, perspective, equipment list and "programming and master planning guides" (specification references, area and utility requirements, heating requirements, etc.); the second provides design data and details on functional, structural, mechanical and electrical requirements, along with reference sources; and the third and fourth are detailed schedules listing required characteristics of equipment — general, mechanical and electrical —

(Continued on page 288)



Illustrations show some of the studies made for USAF by the private architect-engineer contractors to indicate the variety of results possible with the new definitives. Above: flight simulator building, entrance; Giffels & Vallet, Inc., L. Rossetti, associated engineers and architects. Below: studies by Daniel Mann Johnson & Mendenhall, Architects-Engineers, for (1) ballroom terrace; (2) NCO open mess, entrance; (3) 400-man dining hall; (4) 800-man dining hall

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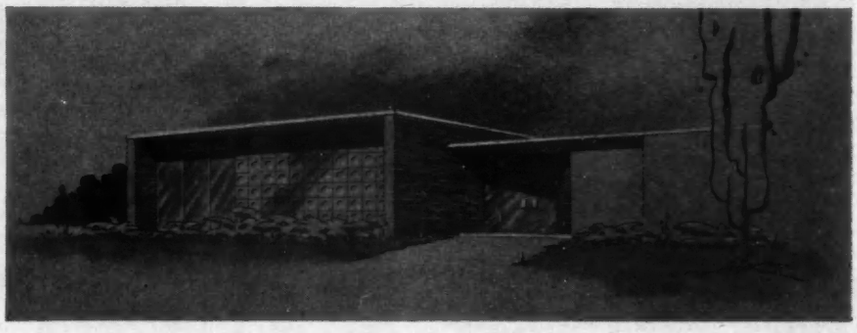

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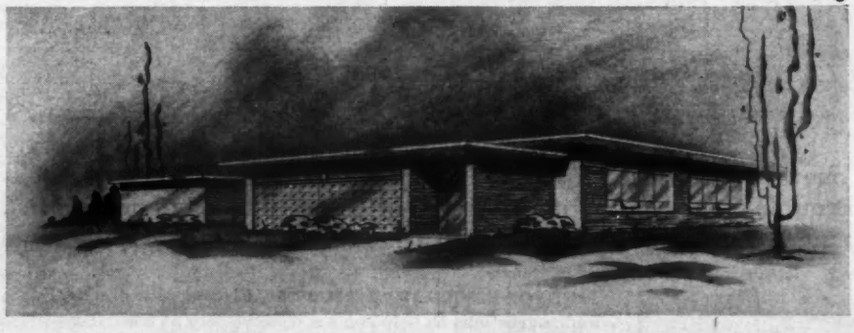

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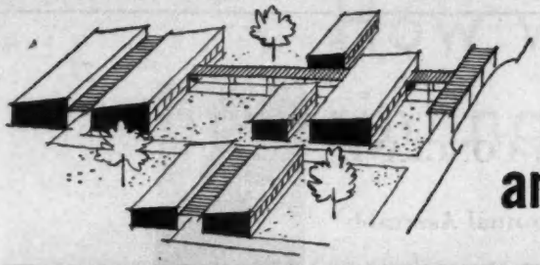

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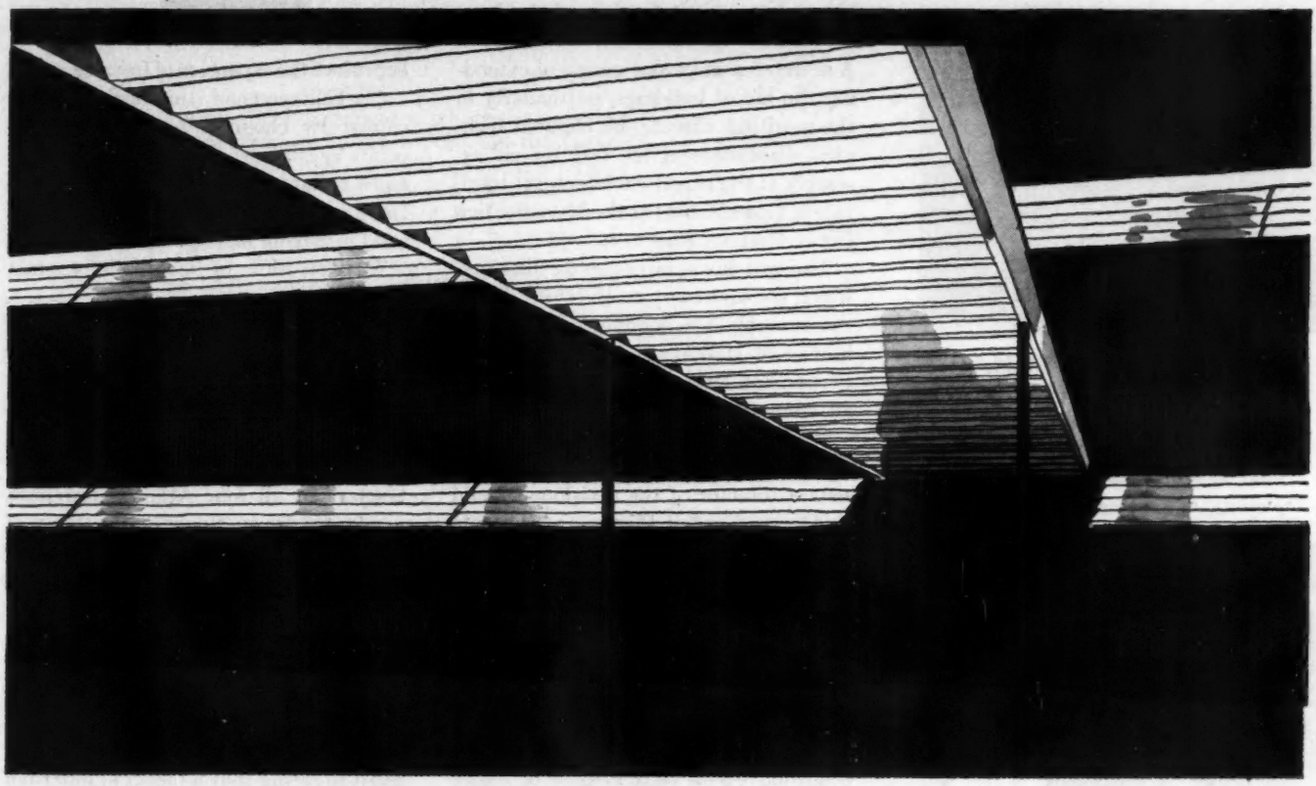

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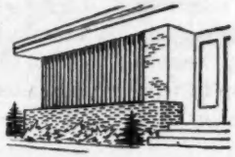

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R.A.I.C. officers for 1955–56: A. E. Priest, second vice president; W. Bruce Riddell, first vice president; A. J. C. Paine, president; Douglas E. Kertland, honorary treasurer; and Maurice Payette, honorary secretary

Donald Mackay, at right, receives the Institute's Allied Arts Medal from the Hon Alistair Fraser, Lieutenant Governor of Nova Scotia; also shown at annual dinner, Premier Henry D. Hicks (seated) and president Paine

A search for ways and means of extending the life of buildings, particularly in the maritime climate, highlighted technical discussions at the 48th annual assembly of the Royal Architectural Institute of Canada, held at the Nova Scotian Hotel, Halifax, June 1–4.

The two-day symposium on masonry, which got underway on the third day of the assembly, was conducted by C. A. E. Fowler of Halifax. Neil M. Stewart of Fredericton introduced the panelists, all from the Division of Building Research of the National Research Council in Ottawa: Dr. Neil B. Hutcheon, assistant director of the division, Donald B. Dorey, Gordon Plewes and Thomas Ritchie.

The panelists agreed that Canada has one of the most severe climates in the world as far as its effects on buildings are concerned. While deterioration of masonry in the maritime provinces may be somewhat more rapid than in other parts of the nation, they said, the same condition exists to a greater or lesser degree throughout the entire country.

Three main reasons were cited for failure of building materials to resist the climatic rigors of the Maritimes:

(1) Penetration by water: in a laboratory test, a 12-inch brick wall subjected to the equivalent of a three-day rainfall, was saturated in 20 minutes. Serious damage results if a sharp drop in temperature follows a rain storm or thaw because of the expansion of freezing water.

(2) Efflorescence: this disfigurement, caused by chemical action which deposits crystalized salt on masonry surfaces, is hard to avoid in localities where there is no choice but to use salt water sand in mixing mortar.

(3) Corrosion of metals in contact with masonry.

In a discussion which formed part of the symposium, R. F. Legget, director of the Division of Building Research, N.R.C., said that extensive studies were being made by the division. The experience of architects, engineers and contractors in all four Atlantic provinces would be drawn upon in the hope of solving the building problems peculiar to this part of Canada.

R.A.I.C. president A. J. C. Paine praised efforts being made in the laboratories, but stated that in his opinion more rigid inspection of construction was necessary. Masonry skills had shown a decline, he said, and architects could assist in seeing that a higher standard of competence was maintained.

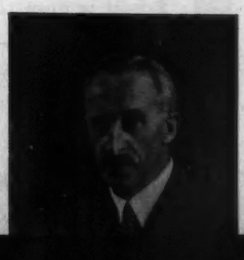
A New Research Station

At the close of the symposium, Mr. Legget announced the establishment of a research center in Halifax to probe the effects of the maritime climate on building materials, particularly masonry.

(Continued on page 28)

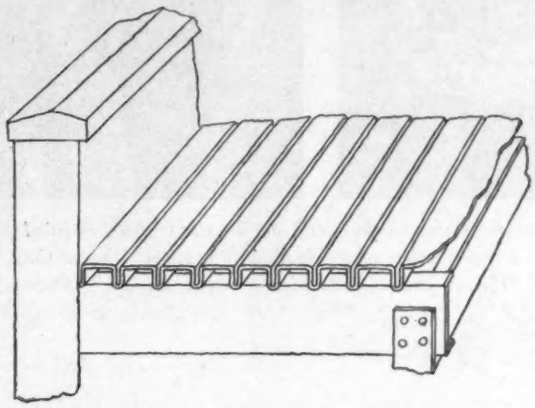
Participants in the masonry symposium included Charles Fowler, vice president, Nova Scotia Association of Architects; Chairman N. M. Stewart; Dr. N. B. Hutcheon, National Research Council; R. Stirling Ferguson, also of N.R.C.; and Donald Tibbetts, of the new Maritime research station

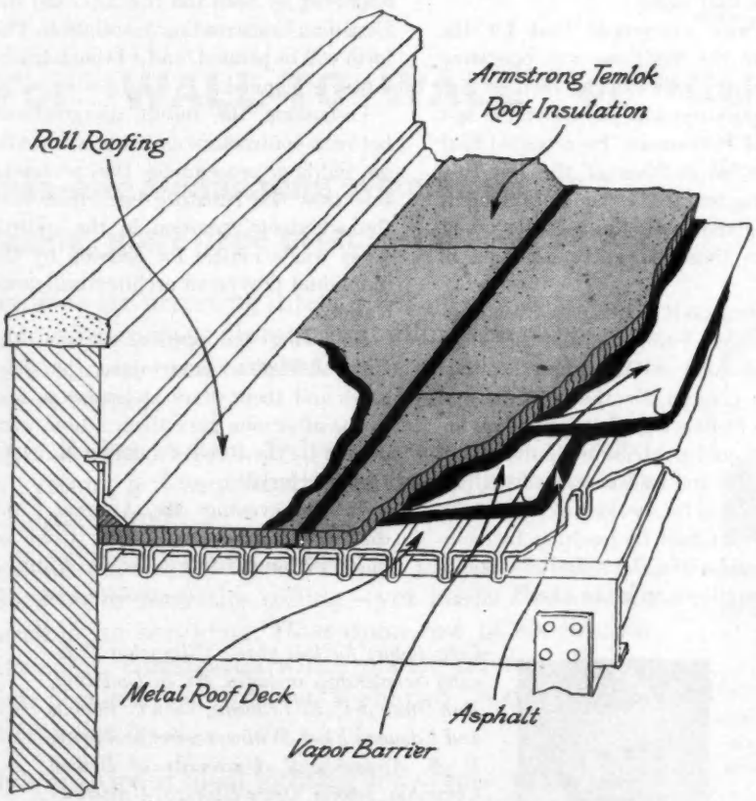
Officers and new members of the College of Fellows include (seated) A. T. Galt Durnford, dean; Forsey Page, retiring chancellor; W. Bruce Ridell, registrar; (standing) Alvin R. Prack; Gordon Bridgman; Burwell R. Coon, incoming chancellor; E. A. Gardner; and Walter Moorehouse. Below: new Honorary Fellow, Professor Percy E. Nobbs



How would you insulate this printing plant roof?

A printing plant is being located where the outside design temperature is minus 10° F. In the large pressroom for multicolor offset lithography, interior temperatures will be held between 75° and 80°, with a relative humidity of 46% to 48%. A central heating and air-conditioning system is to be installed. With metal roof deck construction, what type and how much roof insulation would you specify over the pressroom?





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(Continued from page 26)

Left: President Paine confers with the secretary of the Institute, C. J. G. Carroll. Center: at the Institute's annual Andrew Cobb Memorial Dinner, from left to right — Mrs. A. J. C. Paine, Alderman J. G. DeWolf; Mrs. Cobb; Mr. Paine; and Mrs. DeWolf. Right: A. Edwin Priest of Halifax, honored for his service to the Nova Scotia Association of Architects, receives an engraved cigar box from W. M. Brown; Allan Duffus, president of the Nova Scotia association, and Mrs. Priest, look on

The center is to be known as the Maritime Regional Station, Division of Building Research, and will be located in N.R.C.'s existing regional laboratory on the campus of Dalhousie University.

Mr. Legget stated that the station would be in operation by July, and by the end of this year would be dealing with problems of masonry construction arising from maritime climatic conditions. Work already done in this field by the Nova Scotia Technical College, with support from the Nova Scotia Research Foundation, will be supplemented by the station, and close cooperation has been arranged with the Meteorological Division of the Department of Transport, and the Halifax regional office of Central Mortgage and Housing Corporation.

Paine Opens Assembly

About 100 delegates — bad flying weather delayed the arrival of others until later — heard R.A.I.C. president Paine open the 48th annual assembly on Thursday morning, June 2. The previous day had been spent in pre-assembly meetings, topped by a "get acquainted" reception that night.

Mr. Paine announced that for the first time the Institute was operating under its new bylaws. The Revised Act of Incorporation was passed at the last session of Parliament. He reported that the financial position of the Institute was strong, and that consideration might soon be given to obtaining larger premises than those currently occupied in Ottawa.

Reporting on R.A.I.C. public relations activities, Mr. Paine said that the Council had decided not to employ a public relations counsel for the present, and that the feeling was that individual architects could contribute "publicity of high quality and with lasting effects" by "volunteering for service on committees, and Service Clubs, by teaching, by membership on building code and town planning committees, and the like."

Mr. Paine also announced that the Legal Documents Committee had completed revision of the "Cost Plus" contract, and that the changes had been approved by both the R.A.I.C. and the Canadian Construction Association. The form will be printed, and a French translation is planned.

Discussing the recent disagreement between contractors and subcontractors on bidding procedures, the president said that the Institute had ruled that the architects' position in the controversy was a matter for decision by the individual provincial architectural associations.

Following the opening session, the City of Halifax entertained the delegates and their wives at luncheon, and in the afternoon gave them a tour, conducted by the Royal Canadian Navy, of Halifax Harbor.

In the evening, the Andrew Cobb dinner was held, with Mrs. Cobb as guest of honor. The late Mr. Cobb, a

(Continued on page 30)

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2

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Left: judges for this year's Pilkington Traveling Scholarship included W. S. Goulding, Dan Dunlop, C. E. Trudeau, John C. Parkin and Edouard Fiset. Winners were: first prize, R. B. Archambault, University of British Columbia; second, Ojars Biskaps, University of Toronto; tied for third, Fernand Tremblay and Evans St. Gelais, Ecole des Beaux Arts

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THE RECORD REPORTS NEWS FROM CANADA

(Continued from page 28)

noted Halifax architect, is honored annually by the Institute at a memorial dinner.

Earlier, members of the Nova Scotia Association of Architects had honored A. E. Priest, of Halifax, who helped found the provincial organization. He was presented with a leather-bound engraved cigar box "in grateful recognition of his 23 years of devoted effort on behalf of the Association."

Friday was given over to the masonry symposium in the morning, golf in the afternoon and a lobster supper at the Shore Club, Hubbards, about 30 miles from Halifax.

On Saturday the masonry symposium continued, and the delegates took a tour of the city in the afternoon.

Arts Medal Presented

A highlight of the annual dinner, held Saturday night, was the presentation of the R.A.I.C. Allied Arts Medal to Donald Cameron Mackay, Halifax painter and muralist. This award is made each year for outstanding performance in the arts related to architecture.

At Friday night's lobster supper, from front to back: at left — Mrs. R. S. Morris, Toronto; Mr. and Mrs. Pierre C. Amos, Montreal; Mr. Morris; and Mrs. E. C. Morgan, Toronto. At right — Mr. and Mrs. Forsey Page of Toronto; and Mr. and Mrs. W. Bruce Riddell, of Hamilton, Ont.

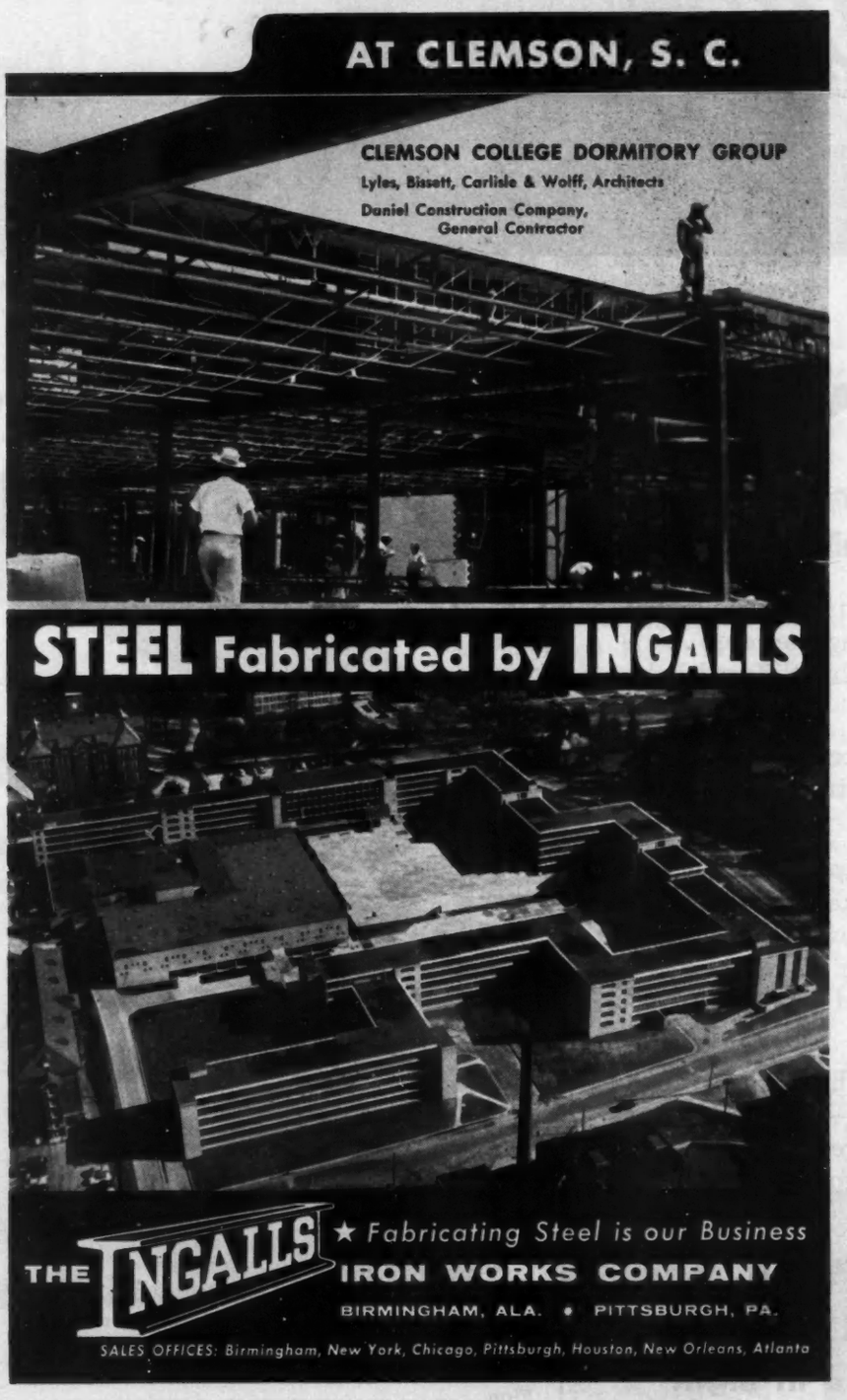
From left to right: Mrs. Mary Holmes of the R.A.I.C. staff; Roy Sellors, Winnipeg; J. P. Dumaresq, Halifax; Mrs. Rolf Duschenes and John R. Disher, both of Saint John

Four of the six new members of the College of Fellows were present at the dinner to receive their diplomas. They were L. Gordon Bridgman of London, Ont., A. E. Gardner of Ottawa, Walter N. Moorehouse of Oakville, Ont., and Alvin R. Prack of Hamilton, Ont. The other two new Fellows, C. Davis Goodman of Montreal and James M. Stevenson of Calgary, were not able to be present.

The election of Prof. Percy E. Nobbs as an Honorary Fellow was also announced. Professor Nobbs, a past president of the Institute, was formerly the head of the School of Architecture at McGill University, and was honored for his "unrivaled contribution to the scholarship and high standing of the architectural profession in Canada."

Exhibitions held in conjunction with the assembly were housed in the Halifax Memorial Library. On display were com-

(Continued on page 32)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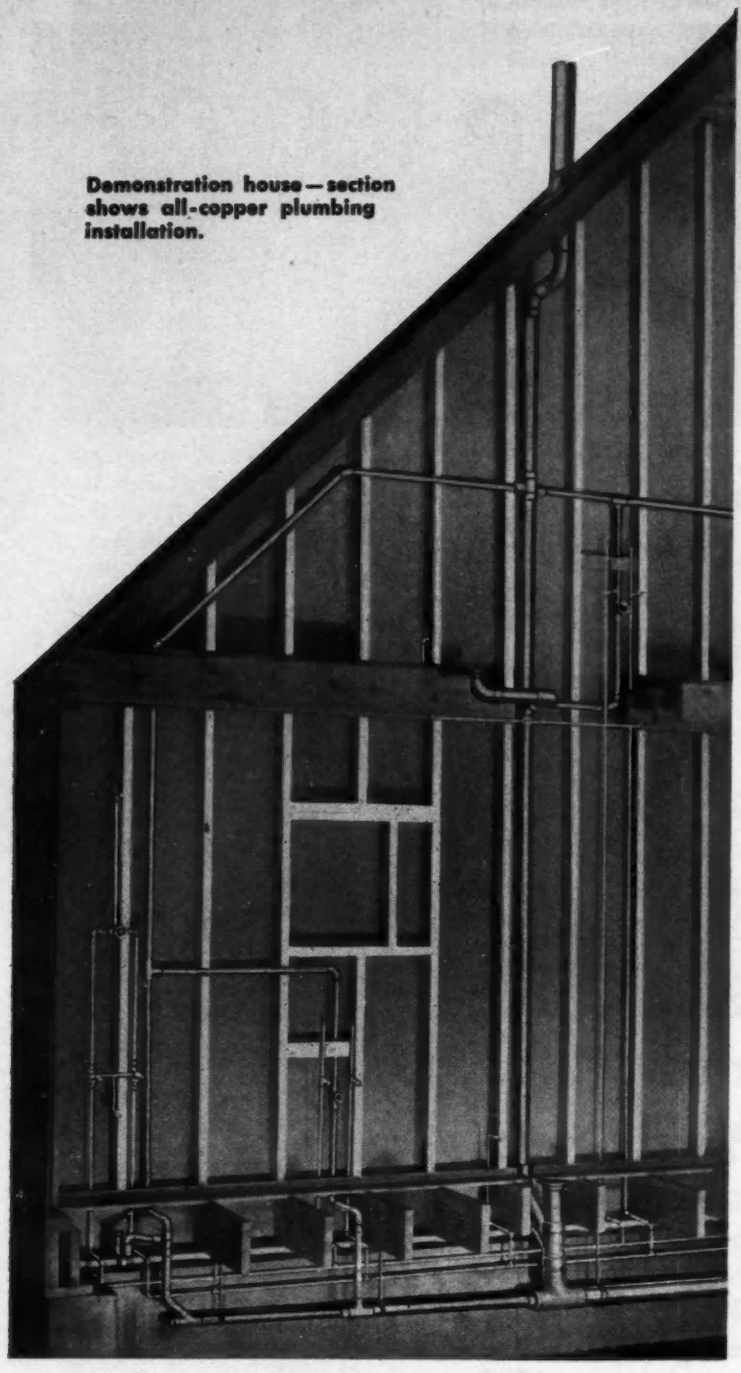

Demonstration house—section shows all-copper plumbing installation.

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THE RECORD REPORTS NEWS FROM CANADA

(Continued from page 30)

petition drawings for the Ottawa Police Administration Building and the Vancouver Civic Auditorium, as well as the prize-winning drawings in the students' competition for the Pilkington Traveling Scholarship in Architecture.

A full schedule of activities was provided for the wives of delegates during the assembly. Included were a coffee party on Thursday and luncheon at the club house of the Royal Nova Scotian Yacht Squadron on Friday.

In closing the assembly, Mr. Paine announced that the 1956 assembly would probably be held in Banff.

Officers for 1955–56

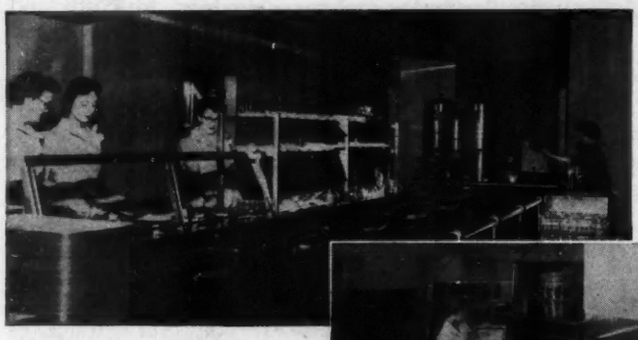
Since they serve a two-year term, officers of the Institute remain: president, A. J. C. Paine; first vice president, W. Bruce Riddell; second vice president, A. E. Priest; honorary secretary, Maurice Payette; and honorary treasurer, Douglas E. Kertland. C. J. G. Carroll continues as secretary.

Members of the Council for 1955–56 are: Alberta — K. C. Stanley, H. L. Bouey, W. G. Milne and T. A. Groves; British Columbia — J. Lovatt Davies, John Wade, F. W. Nicolls, Peter M. Thornton and Fred Lasserre; Manitoba

(Continued on page 36)

Left to right: Neil M. Stewart, president of the New Brunswick Association of Architects; G. Paul Brassard and Pierre Morency, both of Ecole Des Beaux Arts; John Bland, McGill University; John A. Russell, University of Manitoba; Fred Lasserre, University of British Columbia; A. T. Galt Durnford, Montreal; and W. G. Raymore, Toronto

Reviewing the masonry symposium — C. A. E. Fowler, Halifax; E. A. Gardner, Ottawa; Ronald M. Peck, Wolfville; W. W. Downie, of Halifax



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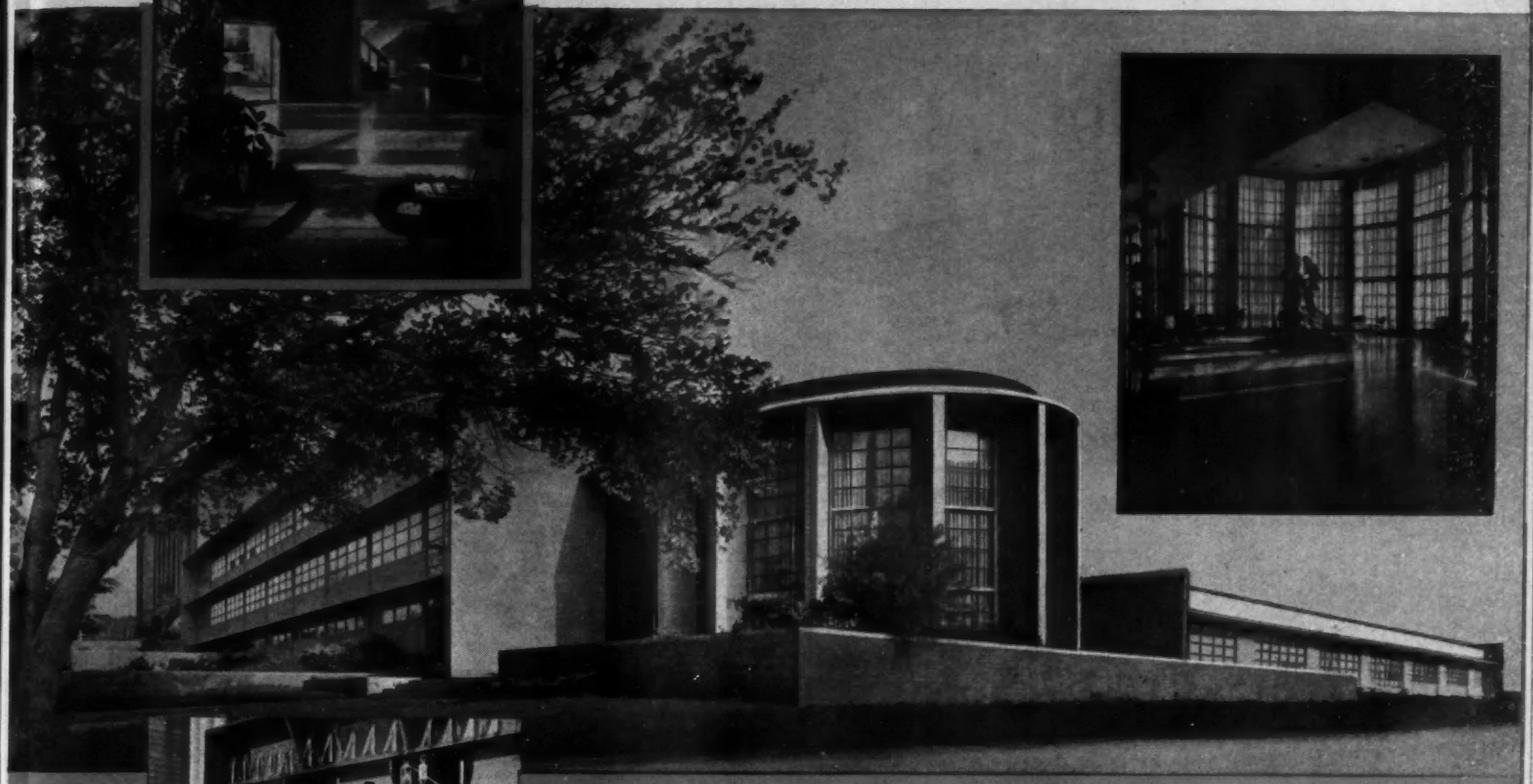

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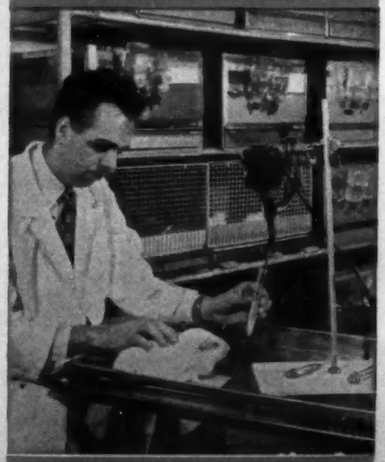

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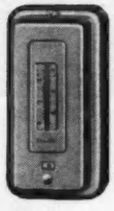

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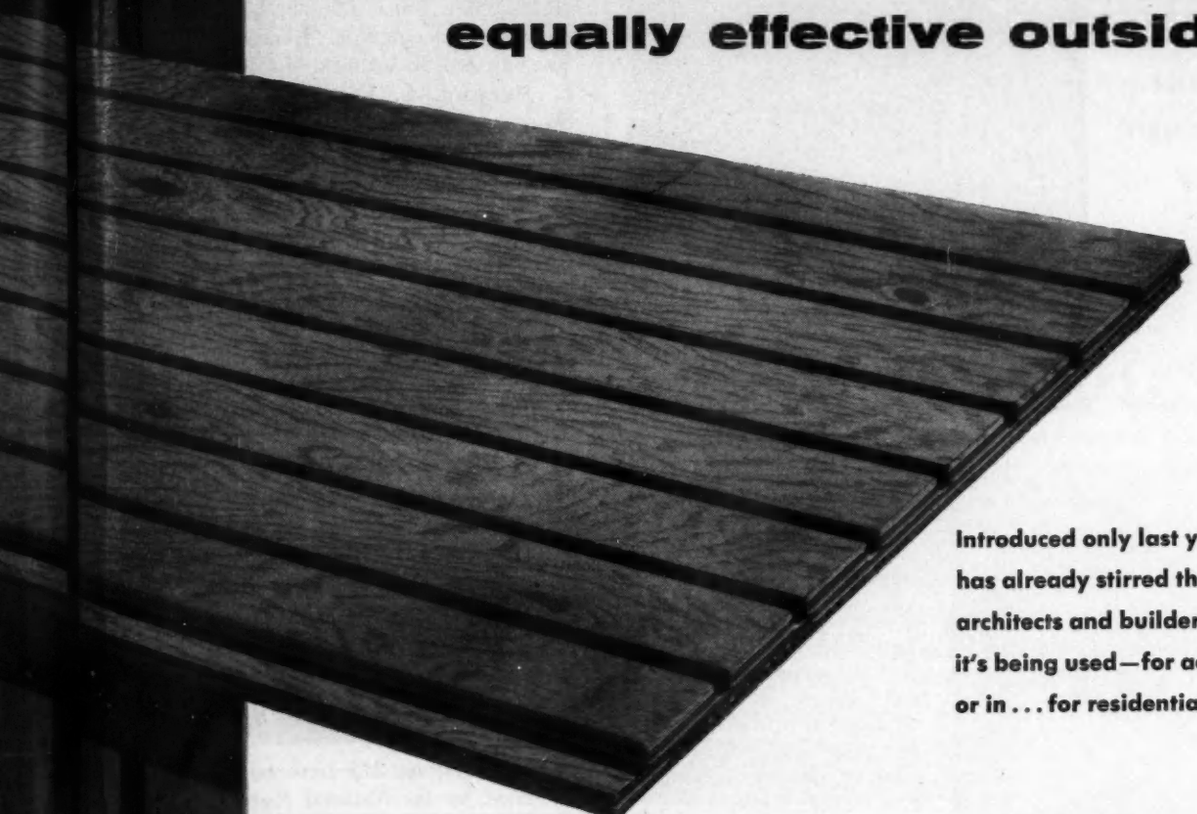

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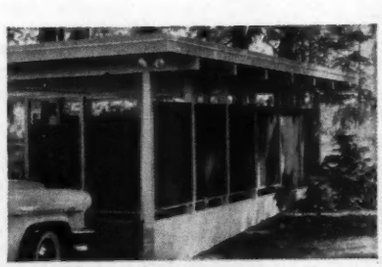

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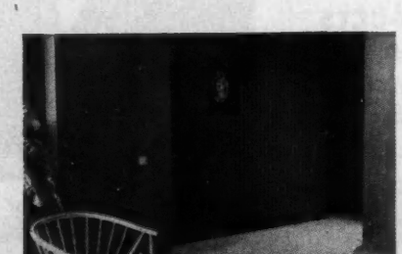

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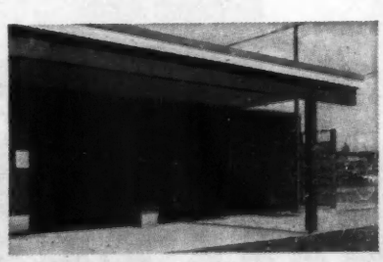

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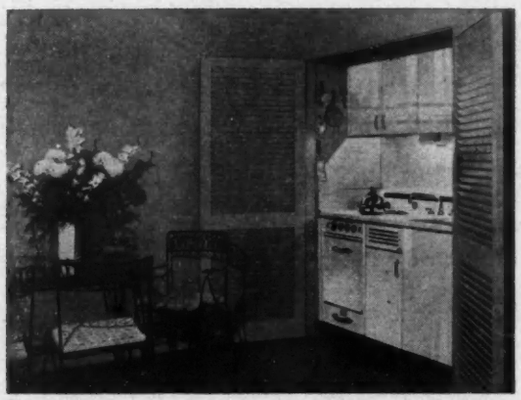

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THE RECORD REPORTS NEWS FROM CANADA

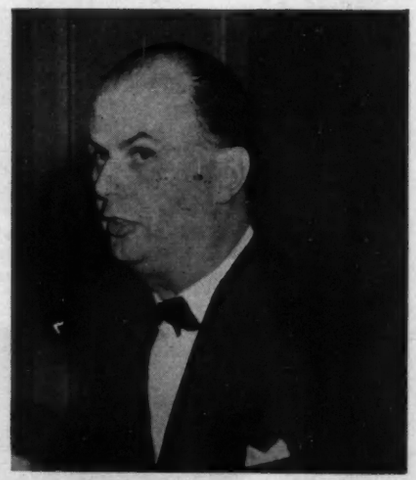
(Continued from page 32)

— Cecil N. Blankstein, Earle G. Simpson, H. H. G. Moody and E. J. Smith; New Brunswick — Neil M. Stewart and H. Claire Mott; Newfoundland — F. A. Colbourne and J. E. Hoskins; Nova Scotia — A. F. Duffus and A. E. Priest; Ontario — A. J. Hazelgrove, H. Gordon Hughes, W. Bruce Riddell, Hugh P. Sheppard, Douglas E. Kertland, F. Bruce Brown, R. Schofield Morris, Earle L. Sheppard, L. E. Shore, Harland Steele and Victor J. Blackwell; Quebec — A. J. C. Paine, P. C. Amos, John Bland, R. E. Bolton, Lucien Mainguy, Maurice Payette, Henri Mercier, E. J. Turcotte and H. Ross Wiggs; and Saskatchewan — Frank J. Martin and R. B. Ramsay.

Burwell R. Coon of Toronto has succeeded Forsey Page as chancellor of the College of Fellows, while A. T. Galt Durnford continues as dean and W. Bruce Riddell as registrar.

(More news on page 38)

To head the new Maritime research station for the National Research Council: Donald Tibbetts (center) and Donald Dorey (right). J. P. Dumaresq joins their conversation

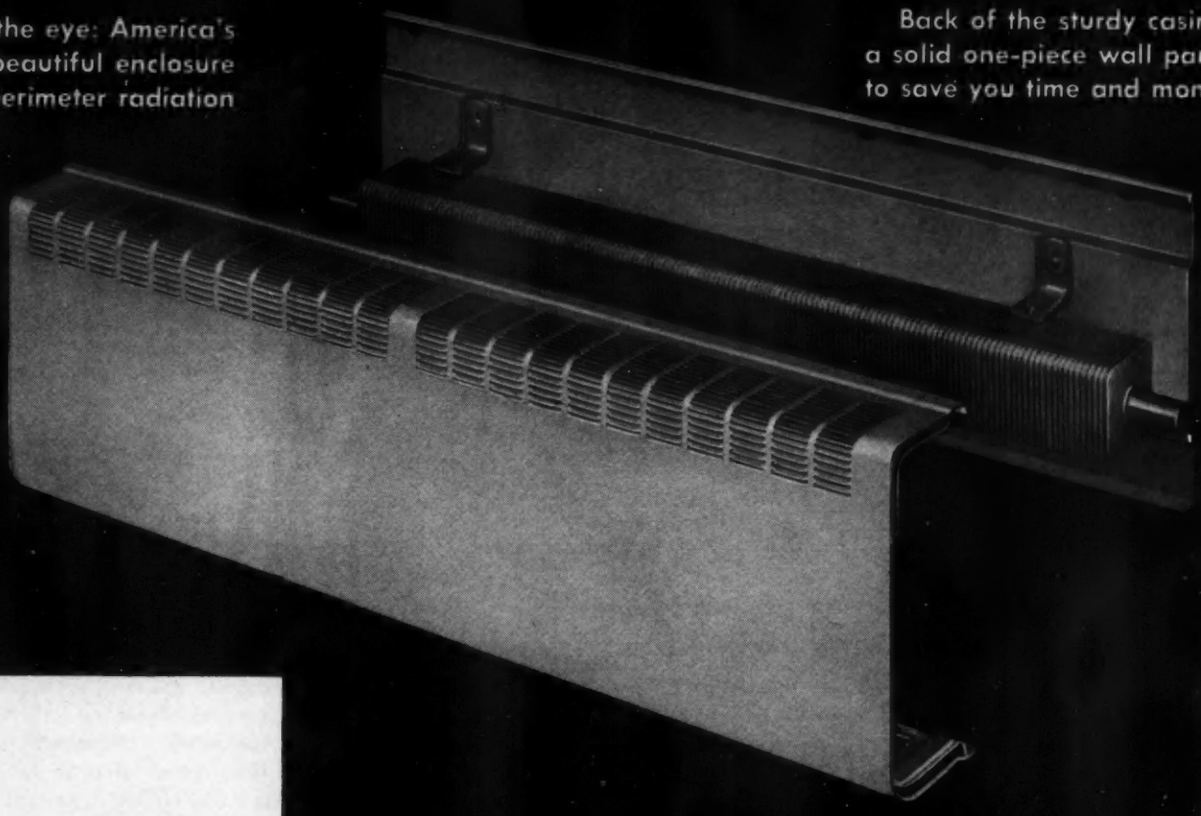


John Lovatt Davies of Vancouver, president of the Architectural Institute of British Columbia, delivers his address at annual dinner

Sill-line: Beauty backed by VALUE

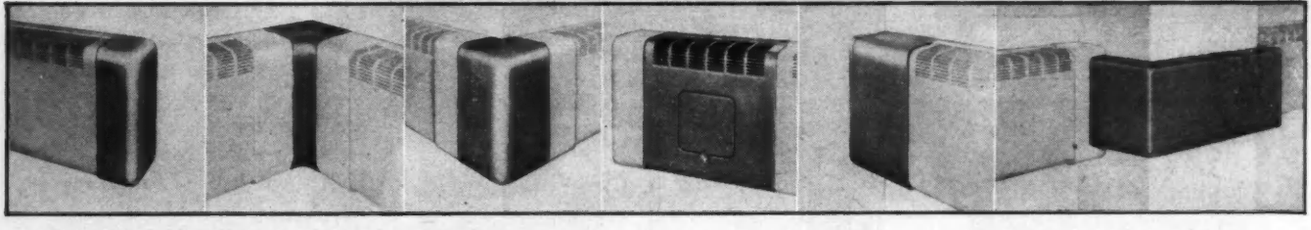
To the eye: America's most beautiful enclosure for perimeter radiation

Back of the sturdy casing: a solid one-piece wall panel to save you time and money



Built up to a standard, not down to a price

The heavier 16-gauge enclosure finished in baked enamel will forever remind you of its beauty and endurance. The standard one-piece back panel that covers raw walls and insures quick, rigid, true-alined installation more than pays its way in savings of time and face material.



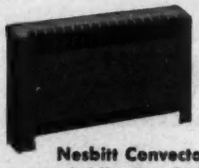
Most for the dollar

Nesbitt Sill-line Radiation is today's best buy in perimeter heating. It offers the most beauty, comfort and convenience for the dollar. For use with steam or hot water; capacities, 2.9 to 11.1 sq ft EDR. Five cabinet types; seven lengths of casing and element from 2′ to 8′. Complete accessories and sleeves—no cutting on the site.

Insist on Nesbitt

Make sure you get all the features Nesbitt Sill-line offers: one-piece back panel, sturdy 16-gauge enclosure, baked enamel finish, and a full range of matching accessories. Send for Publication 102.

Nesbitt Baseboard Radiation
Ask for Publication 272



Nesbitt Convectors
Publication 262

Gas-fired Unit Heaters
Publication 280

Nesbitt
Sill-line Radiation

1955 CONSTRUCTION TOTAL NOW SET AT $41.8 BILLION

A rosy picture of immediate future prospects for construction and allied activities resulted from a mid-year survey made by the 25 industry divisions of the Business and Defense Services Administration.

One finding revised the December 1954 estimate of new construction activity for 1955 upward by $2 billion. The Commerce Department now expects total activity to approximate $41.8 billion this year. That compares with the previous record of $37.6 billion in 1954.

Residential building, said the report, should reach 1.3 million new units this year, providing the biggest boost to new construction. New annual records also are expected for commercial buildings, churches, and nearly all important classes of state and local government construction such as schools, highways, etc. These increases will more than offset the continued decline in direct Federal construction, BDSA said.

On the outlook for materials:

Lumber — With little or no letup in demand for lumber expected in the last half of this year, lumber production in 1955 is expected to total 39 billion bd ft, or about five per cent above 1954. Consumption will exceed domestic production by several billion bd ft and imports may reach record levels.

Copper — The copper fabricating industry is expected to continue operating in high gear and surpass the last half of 1954 in consumption of copper by about 20 per cent, which would make the year as a whole some 25 per cent over 1954. Production of refined copper should gain about 25 per cent in the last six months over the last half of 1954, but a decline in imports will cut the supply to about 10 per cent above the last half of 1954.

Aluminum — Shipments will set an all-time record of over 3.7 billion lb. This is 500 million lb more than the industry had expected at the first of the year, and 700 million lb more than was shipped in 1954. Military shipments will be about the same as in 1954.

FHA ASKS BRAB AID IN CERTIFYING NEW PRODUCTS

The Federal Housing Administration has turned to the Building Research Advisory Board for possible industry assistance in its program of certifying new products for acceptance in FHA-insured home construction.

At the request of Commissioner Norman P. Mason, BRAB convened a meeting recently at which he outlined the agency's problems, magnified since the first of the year by the decision to switch from regional office approval of new products to national headquarters approval. This was done in an effort to make it easier for producers; to enable them to find out the facts in one place instead of scores of FHA offices throughout the nation. But it has resulted in a large backlog of manufacturers' requests for certification of products accumulating here in Washington. Producers have been complaining of the time delays in FHA decisions on their new product applications.

(Continued on page 322)

Over the years, architects, engineers, school authorities and contractors have come to agree that when sources of public drinking water must meet particularly rigid standards of sanitation, mechanical excellence and design, the ideal specification is HAWS! That's why the name "HAWS" is so often found on drinking fountains used in public schools—where equipment must be *extremely* rugged, *thoroughly* dependable, *completely* sanitary. *Always specify* HAWS!

HAWS DRINKING FAUCET CO.

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This all-purpose system of support serves your every need . . . modular . . . with fewer parts.

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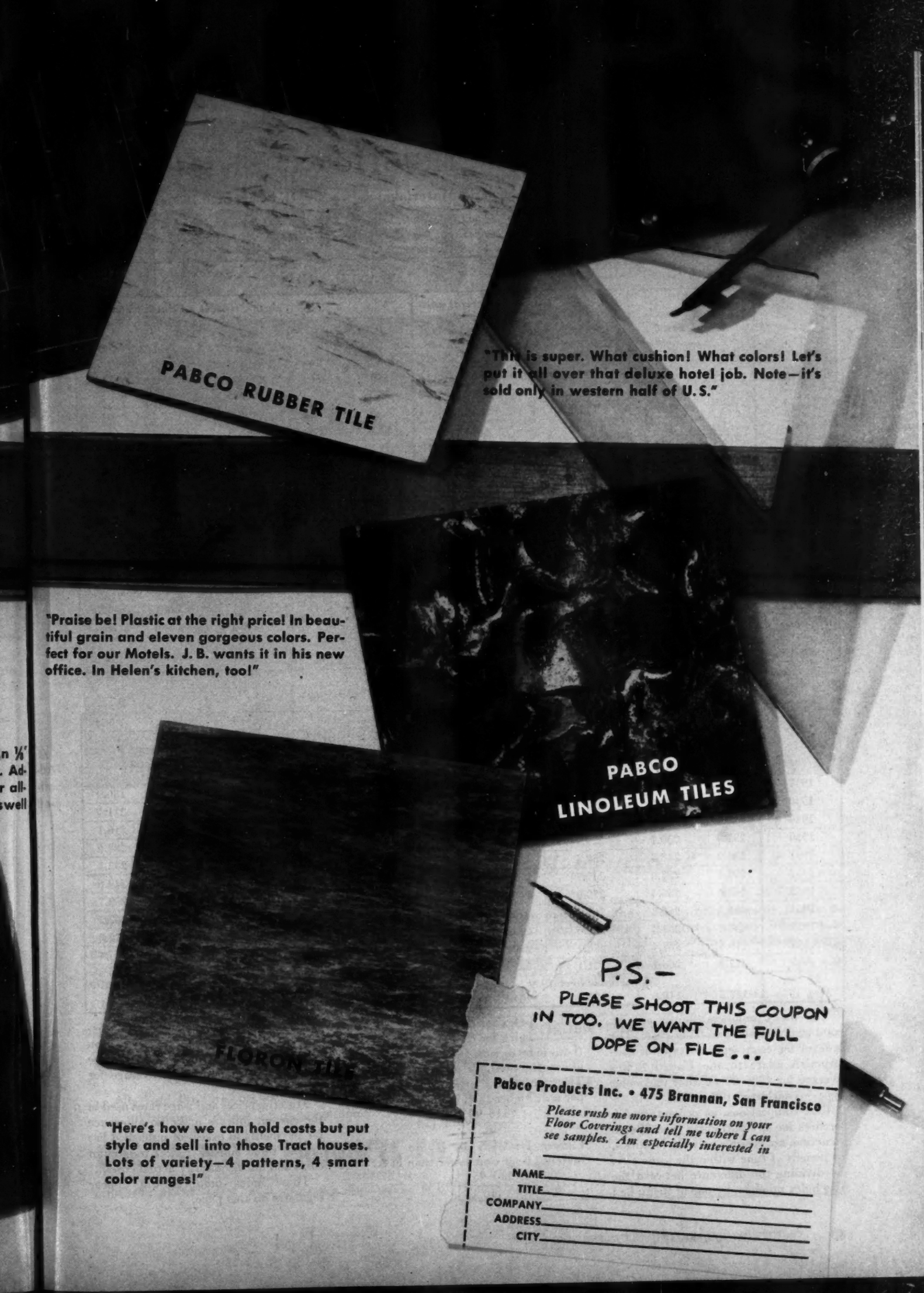
PETE—
ON YOUR
BOARD HERE--
5 MIGHTY GOOD
REASONS WHY WE
SHOULD SPECIFY
PABCO FLOORS!
"New. Exclusive with Pabco. An ⅛" combination rubber-plastic tile. Advantages of both priced under all-vinyl. Plenty durable. Eight swell colors. Ideal for our Bank job."
MIRACON TILE
"Surely you're using this in the Hendry factory? Absolutely tops for all industrial floors. Nobody has ever imitated it. No wonder the Govt. buys it by the mile!"
PABCO MASTIPAVE


PABCO RUBBER TILE
"This is super. What cushion! What colors! Let's put it all over that deluxe hotel job. Note—it's sold only in western half of U.S."
"Praise be! Plastic at the right price! In beautiful grain and eleven gorgeous colors. Perfect for our Motels. J. B. wants it in his new office. In Helen's kitchen, too!"
PABCO
LINOLEUM TILES
FLORON TILE
"Here's how we can hold costs but put style and sell into those Tract houses. Lots of variety—4 patterns, 4 smart color ranges!"
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PLEASE SHOOT THIS COUPON IN TOO. WE WANT THE FULL DOPE ON FILE...
Pabco Products Inc. • 475 Brannan, San Francisco
Please rush me more information on your Floor Coverings and tell me where I can see samples. Am especially interested in
NAME
TITLE
COMPANY
ADDRESS
CITY

CONSTRUCTION COST INDEXES

Labor and Materials **U. S. average 1926–1929 = 100**

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential Brick	Residential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
1950	256.2	254.5	249.5	251.5	248.0
1951	273.2	271.3	263.7	265.2	262.2
1952	278.2	274.8	271.9	274.9	271.8
1953	281.3	277.2	281.0	286.0	282.0
1954	285.0	278.2	293.0	300.6	295.4
Mar. 1955	287.2	283.3	293.3	301.8	295.0
Apr. 1955	287.8	281.0	293.7	302.0	295.3
May 1955	289.3	282.3	294.2	302.5	296.0
	% increase over 1939				
May 1955	134.2	130.6	125.0	126.7	127.5

ATLANTA

Period	Residential Brick	Residential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
1951	212.8	214.6	204.2	202.8	205.0
1952	218.8	221.0	212.8	210.1	214.3
1953	223.3	224.6	221.3	221.8	223.0
1954	219.6	219.1	223.5	225.2	225.4
Mar. 1955	222.4	222.6	225.2	227.2	228.0
Apr. 1955	222.6	222.8	225.5	227.4	228.2
May 1955	222.8	223.0	226.0	228.2	228.4
	% increase over 1939				
May 1955	158.1	168.3	137.6	134.2	141.1

ST. LOUIS

1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
1951	252.0	248.3	238.5	240.9	239.0
1952	259.1	253.2	249.7	255.0	249.6
1953	263.4	256.4	259.0	267.6	259.2
1954	266.6	260.2	263.7	273.3	266.2
Mar. 1955	267.6	261.5	265.6	275.2	268.9
Apr. 1955	270.6	264.4	270.1	280.0	273.9
May 1955	272.8	266.1	271.1	281.0	275.1
	% increase over 1939				
May 1955	147.5	148.6	128.3	134.5	131.1

SAN FRANCISCO

1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
1951	245.2	240.4	239.6	243.1	243.1
1952	250.2	245.0	245.6	248.7	249.6
1953	255.2	257.2	256.6	261.6	259.7
1954	257.4	249.2	264.1	272.5	267.2
Mar. 1955	262.0	254.1	268.3	277.5	272.0
Apr. 1955	264.5	256.0	271.2	281.6	275.4
May 1955	266.3	257.5	271.9	282.3	276.3
	% increase over 1939				
May 1955	152.1	159.3	131.6	131.5	137.1

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

Aluminum grating now only slightly higher than conventional steel gratings

Borden, through many years of plant production control, can now produce aluminum floor gratings by the same commercial methods used for ordinary steel gratings. Thus the ultimate in-place cost is only slightly higher than that of conventional gratings.

Once installed, the floor gratings need never be painted and have all the advantages inherent to aluminum—which includes corrosion resistance, spark-proof and light weight.

SEE OUR CATALOG IN SWEET'S

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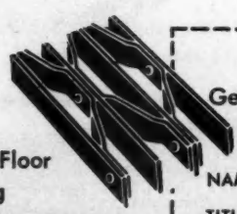

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ALL THE FEATURES *plus*....

SQUARE D's
NEW
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SWITCH BOARDS

DESIGN LEADERSHIP FEATURES

Distinctive Styling provides an attractive, modern appearance matching the control center design.

Easier Installation because removable front and back plates expose generous wiring parts. Isolated horizontal wiring trough has drop-off openings, assuring safer, neater wiring.

Flexibility. Complete sections or branch units can be added or changed to meet specific job requirements.

Easier Inspection and Maintenance. Front, side and back plates are removable, thus providing easy and immediate access to specific areas.

SEPARATELY OR AS A TEAM....

Write for Bulletin SD-18. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

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MATCHED ENCLOSURES!

SQUARE D's
NEW
PLUG-IN

CONTROL CENTERS

DESIGN LEADERSHIP FEATURES

Increased Safety because bus bars are fully enclosed, rigidly supported and have ample cross section...circuits isolated by individually enclosed plug-in units...disconnect handle designed for maximum operator protection.

Flexibility. Individual plug-in units or complete sections can easily be added, removed or exchanged. Push-buttons, pilot lights, and selector switches can readily be added to unit doors.

Installation Economy. All wiring channels are large and accessible from front without removing units...no "wire fishing."

Space economy, too. Up to six combination starters fit in a 20"x20"x 90" section. Plug-in unit heights are designed in space-saving increments of 3 inches.

....THEY DO THE JOB BETTER!

Write for Bulletin 244. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

GARDENS IN THE ALPS

New Gardens. By Ernst Baumann. Editions Girsberger (Zurich) 1955. *American distributor: George Wittenborn & Co., 38 East 57th St., New York.*

BY GEORGE PATTON, A.S.L.A.

Nature's Landscape to a German-Swiss is thought of as a free and equal partner, a beneficent friend and host, not a servant to be disciplined and controlled. To the German-Swiss, the freedom of unrestrained nature symbolizes the antithesis and the antidotes to everything wrong with the man-made world.

New Gardens presents in great detail eight of the author's "Nature Gardens". They consist for the most part of copiously planted residential properties in Northern Switzerland.

The eight gardens are listed by the following descriptive titles:

THE TOWN GARDEN
THE GARDEN ON THE SLOPE
THE LAKESIDE GARDEN
THE GARDEN ON THE HILL
THE LANDSCAPE GARDEN BY THE LAKE
THE ESTATE GARDEN
THE LITTLE GARDEN
THE COUNTRY HOUSE GARDEN

The common denominator of these eight gardens is then essentially *rural character*. Man-made elements are respectfully subordinated to nature. Even the tiny Estate Garden, a lot only 65 ft by 125 ft containing a one-story house designed by the author, is given an idyllic rural charm by a rich variety of spaces created by plant materials. One has but to compare its thoroughly planned site development with similar sized house lots in this country to realize the extent to which we Americans waste outdoor space.

As we would expect from this well-known Swiss publisher, the book is a handsome example of modern printing. Typography, layout and the many photographs and drawings are excellent. (The term "New" in the title may mislead readers who expect a book showing the latest design trends and details such as Peter Shepheard's excellent *Modern Gardens.*) Baumann's gardens lack the spectacular effects and the novel detailing we have grown to expect of modern gardens. They are more timeless in style than they are "contemporary".

The chief value of the book is that it causes us to re-examine our current attitude toward nature and design. To quote Richard Arioli from the jacket, "We are immediately struck by the extent to which former literature and exhibitions dismembered the garden by exaggerating the motif".

The manner of presentation will be admired by anyone who has attempted to show complex spaces, such as gardens, by a series of photographs. Numerous small sketches and plans keyed to camera positions for photographs make it possible to "get the feel" of the space design. There are aerial views which are particularly useful since so many of the ground photographs show only small corners or close-ups of plants. An ardent plantsman, the author often focuses attention on comparatively unrelated details such as the magic and wonder

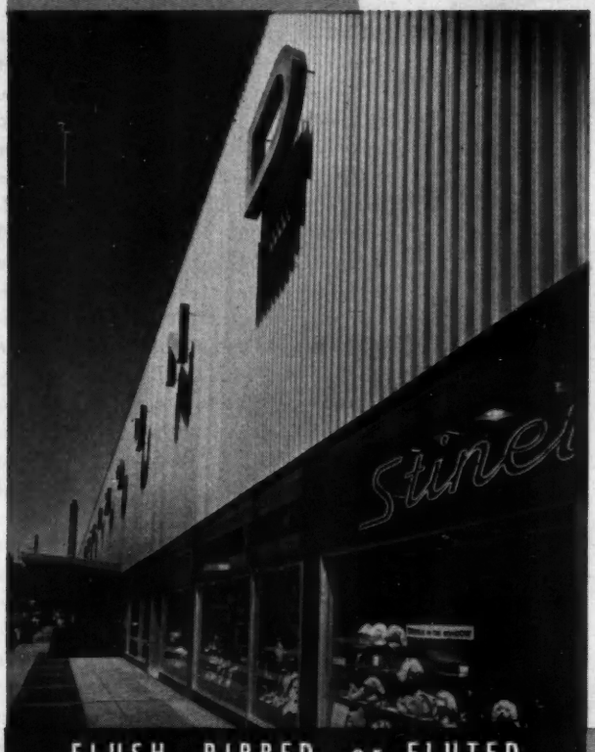
(Continued on page 48)

Mr. Patton, a landscape architect in Philadelphia, studied at the American Academy in Rome for two years.

INSULATED METAL WALLS

for INDUSTRIAL and COMMERCIAL BUILDINGS

ALUMINUM, STAINLESS or GALVANIZED STEEL



FLUSH, RIBBED, or FLUTED
Over-all "U" Factor of Various Types is Equivalent to or Better than Conventional 16" Masonry Wall

From Maine to California, and from the far north in Canada to Mexico, you'll find new, modern industrial and commercial buildings sporting bright, attractive exteriors of Mahon Aluminum or Stainless Steel Curtain Walls. In a few short years, the trend has swung definitely to this economical, light weight curtain wall construction . . . one large manufacturer has built seven complete new plants—including powerhouses—with Mahon Insulated Metal Walls. Several others have built two or more plants employing the same construction. In the Public Service Field, thirty-five power and steam generating plants have been built with Mahon Insulated Metal Walls. This is truly nationwide acceptance. Every day, more and more architects are giving their clients the benefit of this modern wall construction. Before you plan your next building, investigate the savings in material and labor costs, and the cumulative savings deriving from reduced construction time, which is always a plus factor when buildings are enclosed with quickly erected insulated metal curtain walls. Mahon Insulated Metal Walls can be erected up to sixty feet in height without a horizontal joint—a feature of Mahon Walls which is extremely important in powerhouses, auditoriums and many other types of buildings where high expanses of unbroken wall surface are common. See Sweet's Files, or write for Catalog B-55-B.

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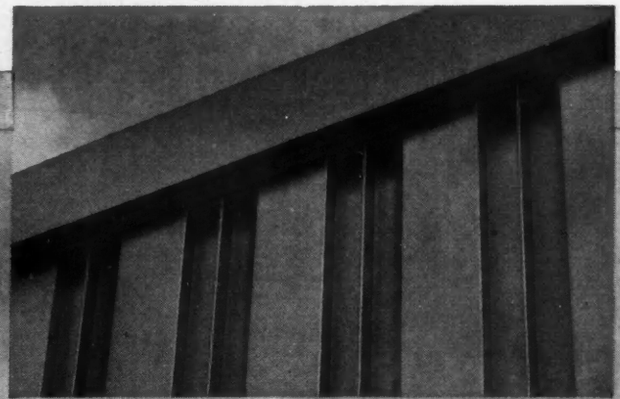
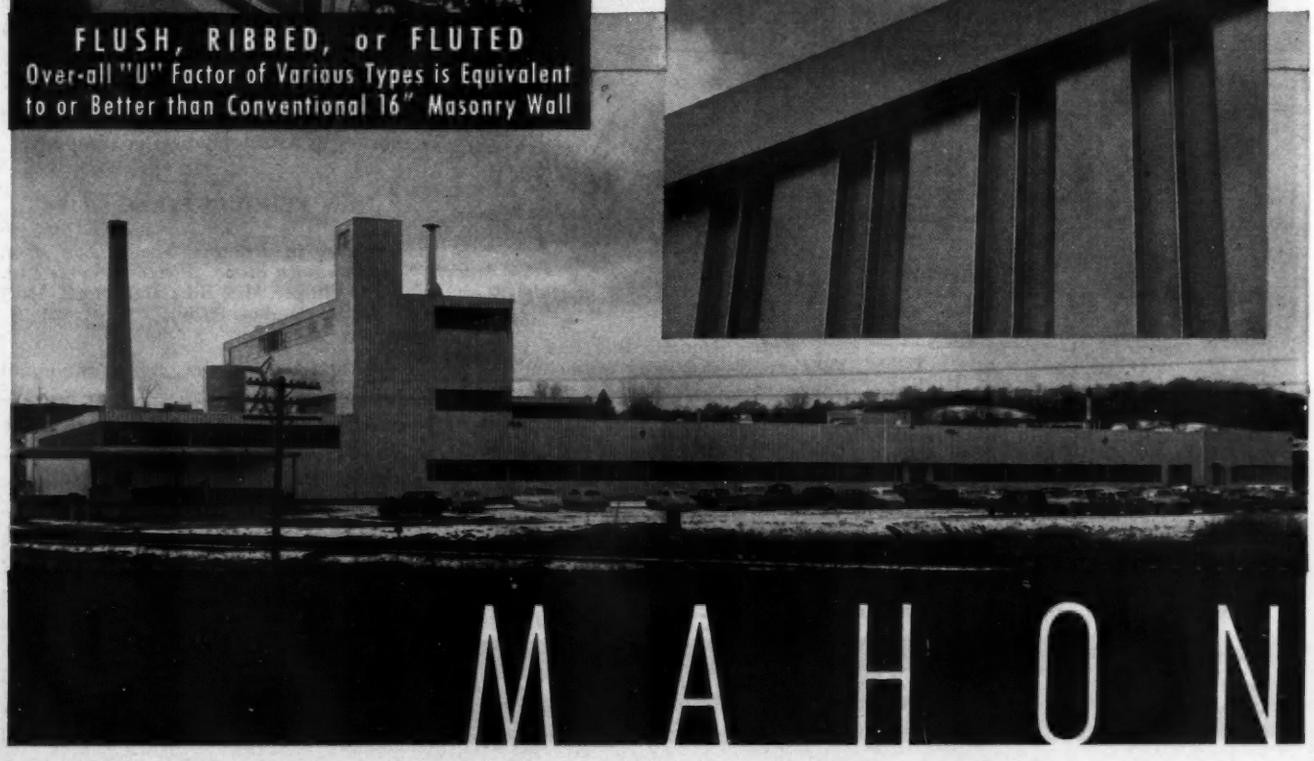


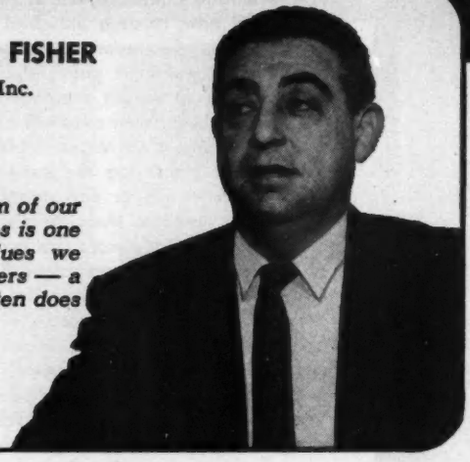


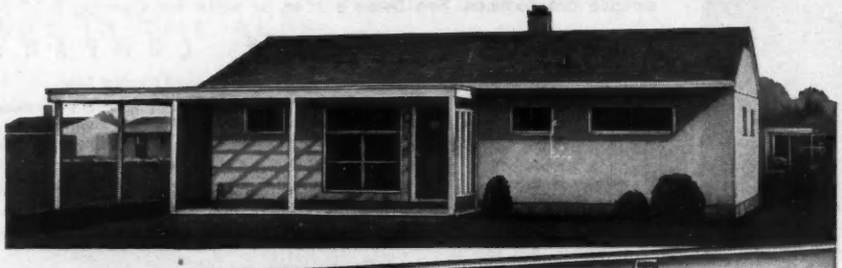
MAHON

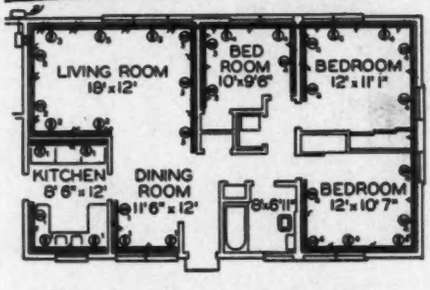
Chicago Builder selects Plugmold for 2,250 low cost homes

Builder MELVIN B. FISHER
President Fisher Homes, Inc.
Markham, Illinois
says:

"Plugmold in every room of our Markham Project Homes is one of the many plus values we have to give our customers — a value which can, and often does mean a sale."







The floor plan of the Fisher Markham home shows location of duplex Plugmold receptacles. No. 12 conductors give Plugmold wiring ample capacity for modern electrical devices.

Architects *everywhere* find PLUGMOLD *Attracts Home Buyers*

Fisher Homes, Inc. find that Plugmold is a sales stimulant in their new Markham, Illinois project, where it is being used to provide duplex electrical outlets every 5 feet in every room of their 2,250 six-room homes, priced at $11,990. Ed Tapp, Fisher Sales Manager, says: "7 out of 10 women prospects inspecting our model home ask about electrical outlets. We have the perfect answer for them."

Stocked by electrical wholesalers, installed by electrical contractors ...everywhere.

For more information, Write Dept. A8

The WIREMOLD Company
HARTFORD 10, CONNECTICUT

REQUIRED READING

(Continued from page 46)

of opening buds, dew on a cabbage leaf, seed pods, foliage in the sun, a caterpillar on a leaf, a dragonfly on a reed.

The presentation falls short in omitting certain information such as the locations of the projects (they all appear to be in the vicinity of Lake Zurich). Several of the plans omit the north point and fail to give credit to the architect of the residence.

A strong point in these gardens is the quality and variety of their spaces. Yet with Baumann's thorough presentation, his spaces are often hard to read for two reasons: first, the amorphous character of the plant material itself allows less positive space definition; second, he follows what seems to be a tendency of Swiss design, to deliberately obscure the motif and to understate a design expression. Loose nonarchitectonic plant materials suggest rather than clearly define his spaces. "The aim", expressed by Peter Meyer in the introduction, "is to create loose outlines which dissolve into the surroundings". We who are used to a more blatant aesthetic may be inclined to dismiss the stable, conservative understatement of Swiss design expression as dullness, the warm human quality as naïve Swiss charm. The subtler statements may be missed at first glance.

Thus, an evaluation of *New Gardens* can not be made on first impressions; their subtle design character requires closer scrutiny of the book. Neither a How-to-do-it book or a resumé of the signs of the time, this book will nevertheless be a valuable addition to the library of many appreciative readers.

A NEW PENGUIN BOOK

Sculpture in Britain: The Middle Ages. By Lawrence Stone. Penguin Books Ltd. (3300 Clipper Mill Rd., Baltimore, Md.) 1955. 297 pp, illus. $8.50.

Although he never claims an equal prominence for British sculpture as compared with French or Italian work of the same period, Lawrence Stone does present a thorough-going case for its many interesting and often unique characteristics. Accompanying the text are a bibliography, notes and, best of all, 192 pages of halftone plates and ten line drawings that illustrate and amplify the analysis.

The theme enlarged upon is the interplay between a native British tendency

(Continued on page 334)

Photo shows "Flor-Ever" Flooring, made by **SLOANE-Delaware Floor Products,** Trenton, N. J.

Cleans off so easily!

Easy maintenance is only part of the beauty of flooring made of BAKELITE Brand Vinyl Resins. Spilled foods, most acids, alkalies, alcohol, and a host of other normally damaging substances don't harm it and can be cleaned right off. And, because of the toughness of flooring made of BAKELITE Vinyl Resins, wear, scuffs and scratches are resisted better and longer.

That's why the original beauty—and there is a very wide selection of style-right colors and patterns for any room in any building—remains brighter for many years longer than ordinary flooring.

From architect to owner, from flooring dealer to maintenance staff, everyone benefits from the beauty, cleanability, durability and economy of flooring made of BAKELITE Vinyl Resins.

BAKELITE BRAND Vinyl Resins

BAKELITE COMPANY, *A Division of Union Carbide and Carbon Corporation* UCC 30 East 42nd Street, New York 17, N. Y.

The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC

from Architecture to Acoustics

When you specify Lowell — the *complete* line of "ear level" sound equipment — you are recommending the line *preferred* by architect and acoustical engineer alike wherever clarity of sound reproduction is essential.

Only Lowell offers:

One source for one complete line. Over 100 models of: Ceiling Baffles • Wall Baffles • Speaker Grilles • Speaker Enclosures • Combination Speaker Baffle and Circline Fluorescent Light Fixtures • Mounting Accessories • Intercom Systems.

Leader in the field, Lowell ear-level sound equipment has proven superior for new and existing construction in more large installations such as airports, railroad stations, hospitals, schools, and factories than any other make.

Lowell Recessed Protective Speaker Enclosures

The Lowell Round Type (CP Series) protective enclosures (illustrated above) are designed for quick, labor-saving installation in wall or ceiling in *new construction* ready for plastering. Speakers are fully protected from fire, dust, falling mortar and rodents. All steel, spot welded construction — with plaster ring attached — is of 22 gauge metal, the exterior rust proofed and interior heavily undercoated to prevent metallic resonance. Sufficient speaker back pressure relief assures high speaker efficiency. Four models in the series to accommodate speakers from 6″ to 15″ in size.

For *existing construction* the Lowell Round Type (XCP Series) protective enclosure offers identical superiority in enclosure design. Both CP and XCP Series may be used in suspended ceilings by the use of Lowell Type SS Support Channels.

Lowell Ceiling Type Baffles with "Floating Conical Action"

Low Ceiling Type Baffle (AL Series)

Lowell AL Series Baffles are especially designed for low ceiling areas or any area where concealment of speaker is required. Lowell "Floating Conical Action" distributes *controlled* sound uniformly throughout a full 360°. They are constructed entirely of 18 gauge aluminum. The diffusing cone is supported through rubber grommets by four ¼″ formed aluminum rods eliminating metallic resonance. Lowell Type AL Baffles are extremely attractive and are available in natural satin finish or in a variety of colored lacquer finishes.

Complete information regarding the Lowell line— **world's largest-used line of sound installation equipment**—will be sent immediately upon request.

HEARD EVERYWHERE

Lowell MANUFACTURING COMPANY

see our catalog in S or write for copy

3030 LACLEDE STATION ROAD, ST. LOUIS, MO., U.S.A.

IN CANADA: ATLAS RADIO CORP., LTD. • 50 WINGOLD AVENUE, TORONTO 10, CANADA

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FORMED METAL in

- STAINLESS STEEL
- CARBON STEEL
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  Floor Forms · Convector Covers · Stools
- Experience · Skill · Capacity · Performance
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INCORPORATED
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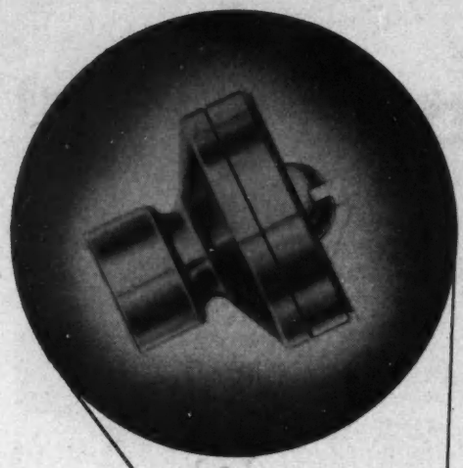
Representatives: Cleveland, New York, Washington, D.C., Amarillo, Tex., Minneapolis, Seattle, Shreveport, La., Butte, Mont., Buffalo, St. Louis, Toledo, Wilmington, Del., St. Petersburg, Fla., Tucson, Denver, Manchester, N.H., Mobile, Madison, Wis., Chicago.

Monel Swivel Disc

One of the Fine Precision-Built Parts That Helps COMMANDER Valves Do a Faultless Job



This exclusive Monel Swivel Disc is found in every Speakman COMMANDER Valve. It is made of Monel because years of dependable operation have proved that Monel gives complete protection against the corrosive action of all types of mineral waters.

As a matter of fact, Monel was selected for construction of the washer retaining screw and valve seat in COMMANDER Valves, too. These parts, though subjected to the hardest wear and most damaging types of water, have proved so dependable that the Speakman Company has never been called upon to replace a complete fitting in the COMMANDER Line because it wore out!

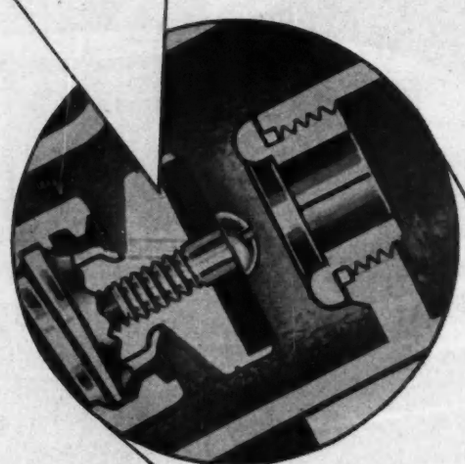
Architects and engineers can be sure of complete client satisfaction when they specify the Speakman COMMANDER Line... the line that is made to outwear, outperform all others—and yet sell at a sensible price!

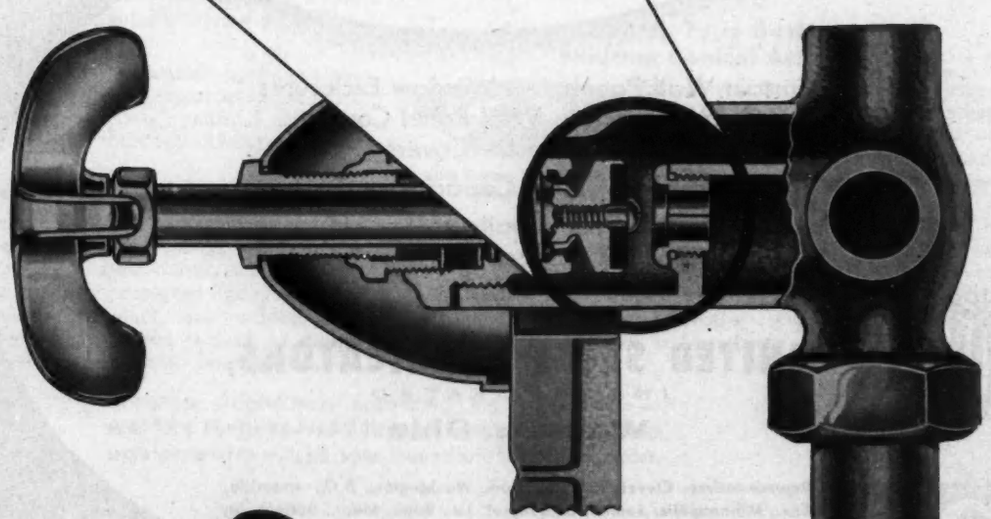
For the finest quality showers and plumbing fixture fittings, always be sure to specify Speakman COMMANDER.

Remember, our reputation is *built* by the products we make, your reputation is *protected* by the products you specify.

WHY IS THIS SWIVEL DISC IMPORTANT?

When ordinary valves (those not containing Monel swivel discs) rotate closed, the washer grinds against the face of the valve seat, causing friction wear on both washer and seat. The Monel disc eliminates this wear because it swivels the moment the washer contacts the valve seat. It evenly distributes wear on washer and seat, thus assuring a perfect, leakproof seal each time the valve operates. Because it is made of non-corrosive Monel, the swivel disc cannot rust and break off.





SEE OUR CATALOG IN SWEET'S

SPEAKMAN

COMMANDER SHOWERS AND PLUMBING FIXTURE FITTINGS

SPEAKMAN COMPANY, WILMINGTON 99, DELAWARE

modern **metlwal** brings DeVilbiss

flexibility for tomorrow...

...efficiency for today

The DeVilbiss Company, Toledo, Ohio—world leaders in the spray finishing and atomizer fields—enjoy Martin-Parry *Metlwal* for its beauty, flexibility and money-saving advantages.

Metlwals are installed quickly and at low cost—can be moved overnight to answer changing office layout problems. They have a lifetime finish and are offered in a broad selection of colors to fit any decorating plan. For walls of enduring beauty, specify Metlwal.

Metlwal's Unique Design

Insures Maximum Noise Reduction

for executive and general offices • commercial and public buildings • hotels • hospitals theatres • schools • stores • laboratories • factories • banks • all interiors.

Exhaustive tests of sound transmission loss—made by an independent research organization—prove Metlwal's assurance of privacy and superior sound control. Write for your copy of the complete research results.

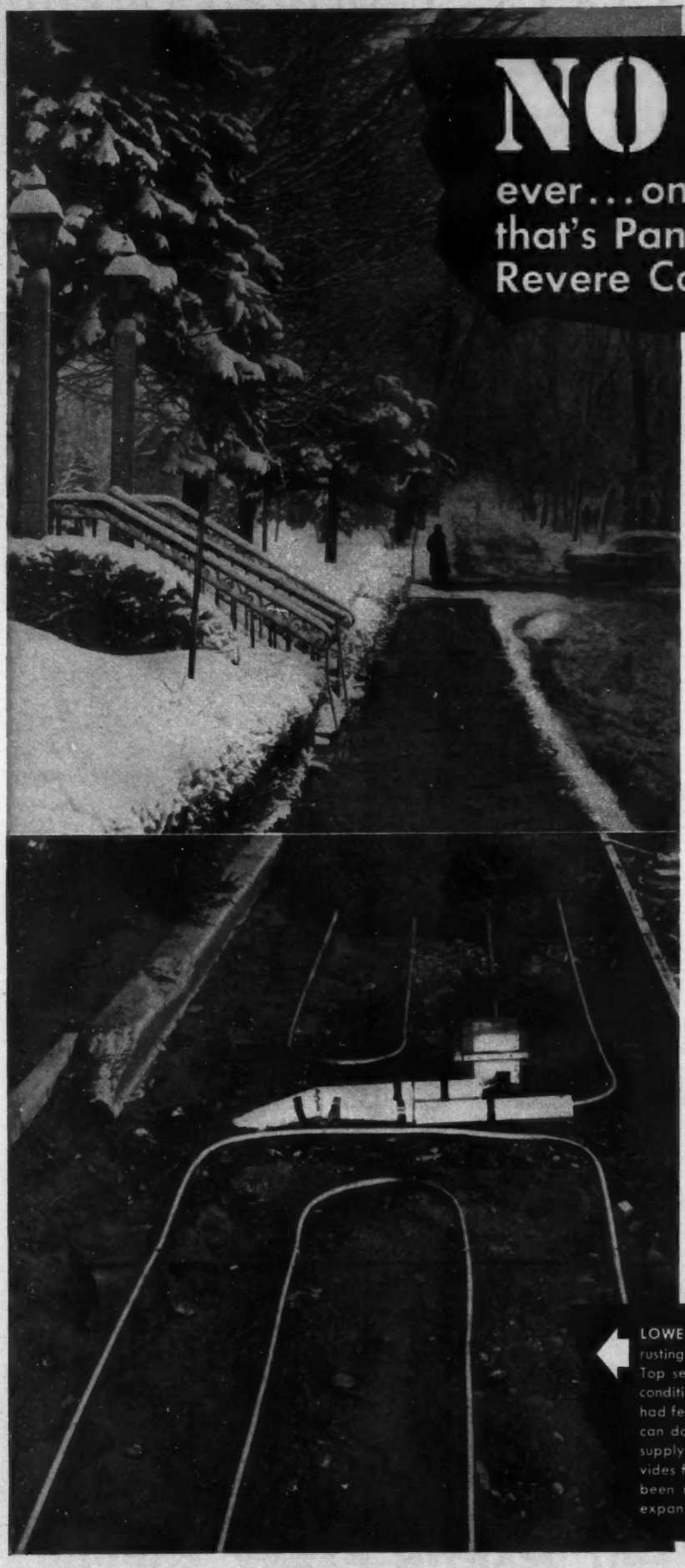
MARTIN PARRY MP PRODUCTS

MARTIN-PARRY CORPORATION

SINCE 1880

BOX 964, TOLEDO 1, OHIO

IN CANADA: MARTIN-PARRY (CANADA) LTD. 82 DUNDAS STREET LONDON, ONTARIO



NO SNOW

ever... on the sidewalk that's Panel Heated with Revere Copper Water Tube

Huge strides are being made by this method of snow removal. No wonder, shoveling and accidents due to snowy walks are eliminated . . . while the time and labor saved pays for the installation in short order.

That's why you'll find snow melting panels also being used on driveways, loading platforms, entrance aprons, service stations, pedestrian ramps at railroad stations, airports and similar spots. One application which bears special mention is the use of coils in garages. They quickly melt the snow on cars, keep floors dry as well as keep the repair shop floors warm so mechanics can lie right on the bare concrete in comfort.

And when you make the panels of Revere Copper Water Tube you have these added advantages: Copper can be bent to conform to the terrain. Bendability permits use of sinuous coils, while the 60-foot lengths of tube mean fewer fittings which, when joined by solder means joints that stay tight. Copper tube cannot rust, rot or deteriorate. That's why, on the inside, full flow and low frictional resistance are maintained throughout its long life. While external moisture will not harm it from the outside.

Keep ahead of the parade. Recommend Panel Heating for snow removal. Revere's Technical Advisory Service will be glad to help you in the proper application of Revere Copper Tube in working up your plans.

FREE! Instructive 16mm Full Color Motion Picture, "The ABC of Radiant Panel Heating." Write Advertising Department for details.

REVERE

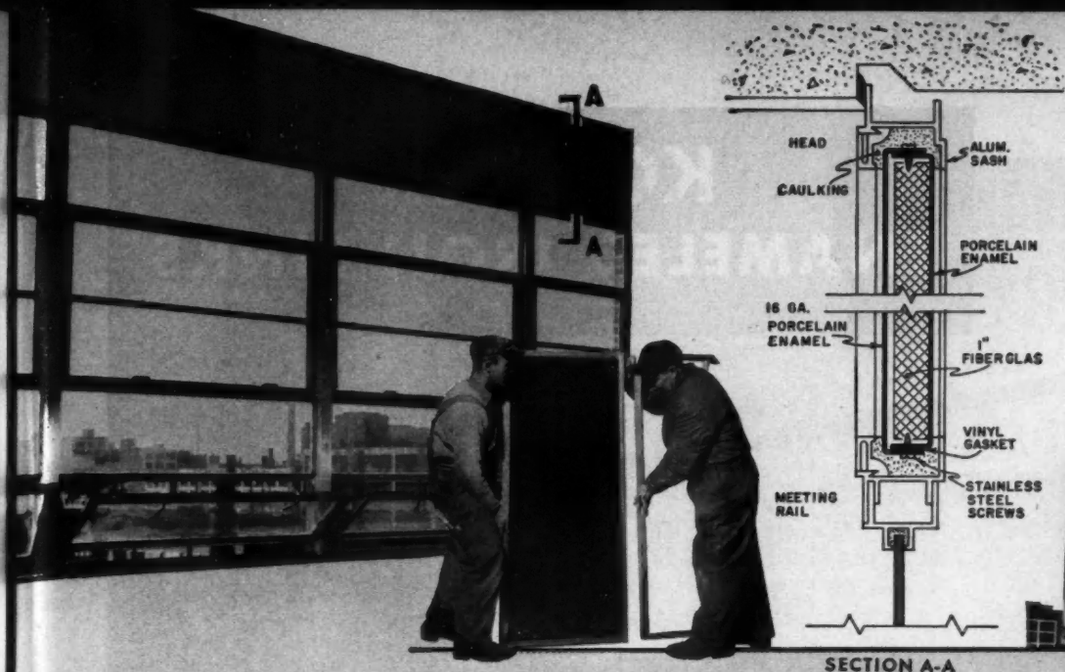
COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, N. Y.

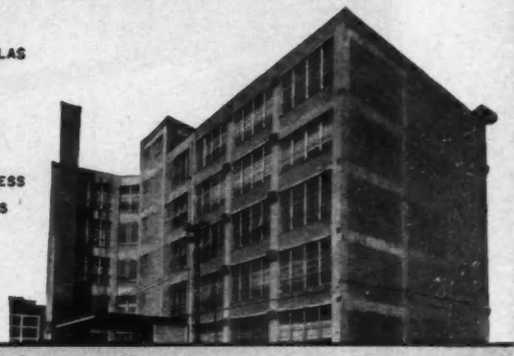
Mills: Baltimore, Md.; Brooklyn, N. Y.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Newport, Ark.; Rome, N.Y.
Sales Offices in Principal Cities, Distributors Everywhere.

LOWER SECTION OF PHOTOGRAPH shows how non-rusting Revere Copper Tube was imbedded in concrete slab. Top section of photo shows same walk under actual snow conditions. Note bends. Think of all the joints necessary had ferrous pipe been used. And think, too, of what seepage can do to rustable materials. Note insulation used on each supply and return line to the coils from the mains. This provides flexibility in the take-offs from the mains, which have been run below the slab, to allow for movement due to expansion and contraction.



SECTION A-A

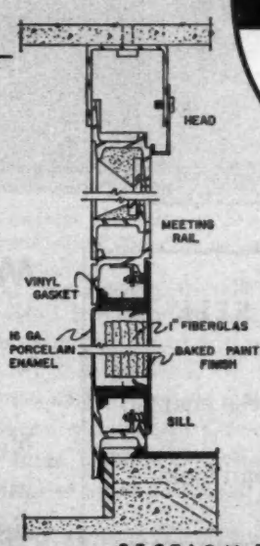
Here, an outstanding remodeling job at the County Welfare Building, Cleveland, shows the adaptability of Davidson Panels for improvement or enlargement of existing structures. Davidson *"Double-Wall"* Panels form both outside and inside wall. Architect: Milo S. Holdstein, Cleveland. General Contractor: The Schirmer-Peterson Co., Cleveland.



the architect's porcelain...

DAVIDSON ARCHITECTURAL PORCELAIN

Davidson Architectural Porcelain is as flexible as your imagination. It can be used for curtain-walls, spandrels, window-walls or to accentuate structural features. It is easy to detail and offers an unlimited choice of color, shape or surface finish. As a result of long field experience and engineering development, use of Davidson Panels is practical for durable construction of any window-wall or curtain-wall. Ease of erection is winning preference for this outstanding building material.



SECTION B-B

Recently completed, Clemson College, at Clemson, South Carolina uses 26,000 square feet of Davidson Porcelain Enamel to achieve a window-wall construction that is entirely prefabricated. Davidson *"Double-Wall"* Panels form both inside and outside wall below windows. Architects: Lyles, Bissett, Carlisle & Wolff, Columbia, South Carolina. Contractor: Daniel Construction Company, Columbia, South Carolina.

Davidson
ENAMEL PRODUCTS, INC.
1106 EAST KIBBY STREET, LIMA, OHIO

DAVIDSON ENAMEL PRODUCTS, INC.
1106 East Kibby Street, Lima, Ohio

Gentlemen: Please send facts about the selection of Davidson *"Double-Wall"* Panels available. The type of project I have in mind is _____

_____

Name _____

Company _____

Street _____

City _____ Zone ____ State _____

KOHLER
ENAMELED IRON SINKS

Wilshire

FEATURES THAT SELL

Acid-resisting
clear through the enamel.

Easy to keep clean,
and clean-looking.

One-piece construction,
without joints.

Self-draining work surfaces.

Pastel colors, or white.

Duostrainers
make basins water-retaining; removable cups collect waste.

High-arched spout
simplifies filling of bottles, vases.

Metal union strips and straight backs insure neat, workmanlike installations

New metal union strips, shaped to fit Kohler cabinet sinks, provide a tight, sanitary seal between sink and adjoining counter tops. The Wilshire double-compartment, double-drainboard sink shown, like all Kohler sinks, is coated with lustrous enamel fused to a base of iron, cast for strength and rigidity. Give your customers the superior service they expect, and will receive, from fixtures and fittings of Kohler quality.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

protect concrete slabs, crawl spaces from subsoil moisture . . . permanently

Warren Olson, Oakland, Calif., member of NAHB, is another builder who protects the hundreds of homes he builds from moisture by using VISQUEEN film under the concrete slab.

Water is a natural enemy of woodframe construction. As much as 12 gallons per 1,000 square feet per 24 hours evaporates from unprotected crawl spaces into stud walls causing rot, paint peeling and other damage. Many gallons seep into unprotected concrete slabs, resulting in cold floors, higher heating bills and costly damage to household goods.

You can keep this water out forever with VISQUEEN film—at a very modest cost. A moisture barrier of VISQUEEN film in place beneath the slab, is ageless and changeless.

1,000 square feet of 4 mil weighs less than 20 pounds. VISQUEEN is made in widths up to 20 feet . . . saves you money on labor costs. For detailed information clip the coupon, attach to your letterhead and mail.

Use VISQUEEN under concrete slabs or floors • in crawl spaces • on warm side of outside walls and top floor ceilings • wherever moisture vapor or water must be locked out.

important! *VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. Only VISQUEEN, produced by process of U.S. Patents No. 2461975 and 2632206, has the benefit of research and resources of The VISKING Corporation.*

DOLLAR SAVING "ON THE JOB" uses of VISQUEEN film

Cover prefinished floors in place. Build partitions right over the film. Salvage for re-use wherever needed.

Cover building materials, tools, equipment.

Close openings during cold or stormy weather. VISQUEEN film lets in all the light.

look for this name on the selvage!

VisQueen® film . . . a product of

THE VISKING CORPORATION, Box AR8-1410
Plastics Division, Terre Haute, Indiana
World's largest producers of polyethylene sheeting and tubing
In Canada: VISKING Limited • Lindsay, Ontario
In England: British VISQUEEN Limited • Stevenage

Name_____

Title_____

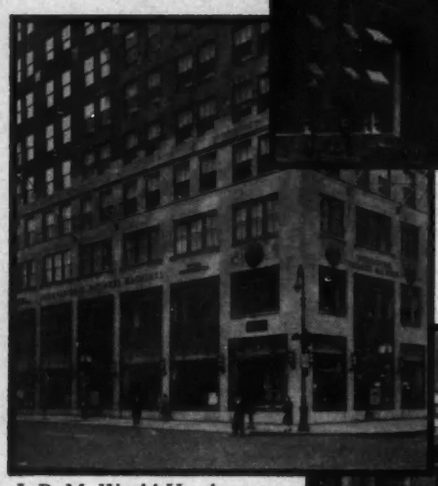
Products_____

Electronic Supply Office
Great Lakes, Ill.

Fairview Hospital
Minneapolis, Minn.

M. H. Lamston
Stores
New York, N. Y.

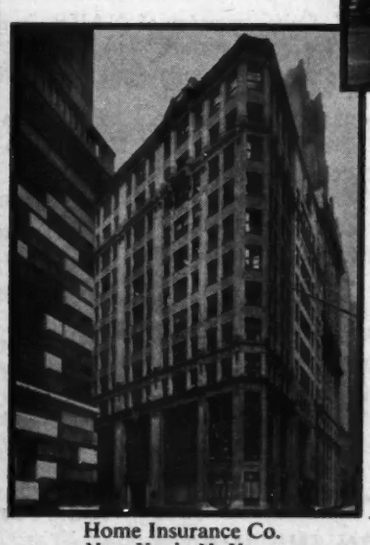
Sinclair Oil Building
Tulsa, Okla.



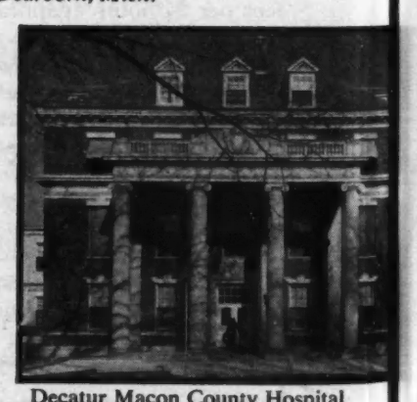
I. B. M. World Headquarters
New York, N. Y.

Dearborn Federal Savings and Loan
Dearborn, Mich.

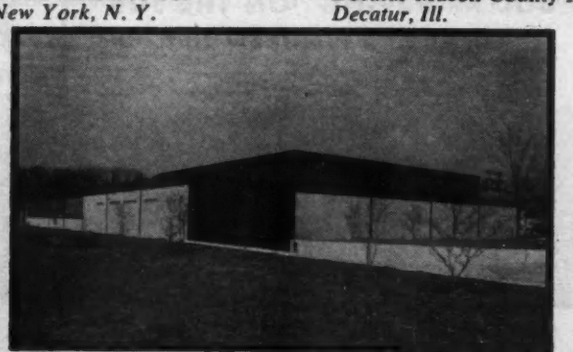
Lever House
New York, N. Y.



Home Insurance Co.
New York, N. Y.



Decatur Macon County Hospital
Decatur, Ill.



General Telephone Directory Co. *Des Plaines, Ill.*

First National Bank
Little Rock, Ark.

"SOME LIKE IT HOT . . .

SOME LIKE IT COLD . . ."

Tuttle & Bailey High Pressure Units

insure indoor weather that satisfies everybody!

No two of these buildings are alike in architectural concept. Each has an individual cooling and heating problem. But all have one thing in common: in every one of these outstanding buildings, and others like them, Tuttle & Bailey High Pressure Air Distribution Units are providing maximum comfort for occupants, efficiently and economically.

No matter what the system design called for — cooling only, heating only, or a combination of both — the wide range of T & B units permitted selection of equipment to meet the *exact* requirements.

Real savings in overall building and installation costs resulted from the installation of high pressure systems. Conduit risers, and a reduction in the number of supplementary equipment rooms, added much more useable — and rentable — floor space. Conduit branches reduced floor-to-floor dimensions.

For complete information on the advantages of a high pressure air distribution system in new construction or for remodeling, get in touch with your nearest Tuttle & Bailey Representative or write for Catalog No. 109 and Bulletin No. 110.

TUTTLE & BAILEY INC

NEW BRITAIN, CONN.

Quiet dining assured. In the Hillcrest Country Club, Oklahoma City, Oklahoma, sound is kept under control by a ceiling of Sprayed "Limpet" Asbestos. Architects: Hudgins-Thompson-Ball & Associates. General Contractor: E. V. Cox Construction Co. Acoustical Contractor: Acoustical Products Co. All are Oklahoma City firms.

Clients get less noise, more heat when you specify

Sprayed "Limpet" Asbestos

In dining room or courtroom, hospital, office or plant, Sprayed "Limpet" Asbestos does four big jobs—produces results that make really satisfied clients.

1. It controls sound two ways. The insulation's surface yields with sound waves, reduces their intensity. And the sound waves themselves are trapped and dissipated by being absorbed in the millions of Sprayed "Limpet" Asbestos pores.
2. It saves heating expenses. Applied on thin, single-layer roofs, it has produced savings as high as 50%.
3. It controls condensation. Water vapor is absorbed—surfaces are left free from moisture. There's no "sweating" effect.
4. It's highly fire-resistant. Under tests by recognized laboratories, its fire resistance was rated up to four hours.

Ideal for irregular surfaces. As this material is sprayed on, it makes no difference how uneven or curved the surface is. No cutting, fitting, clipping or nailing is needed.

Easily spray-painted. Sprayed "Limpet" Asbestos forms an evenly textured, seamless blanket that's a perfect base for decorative painting.

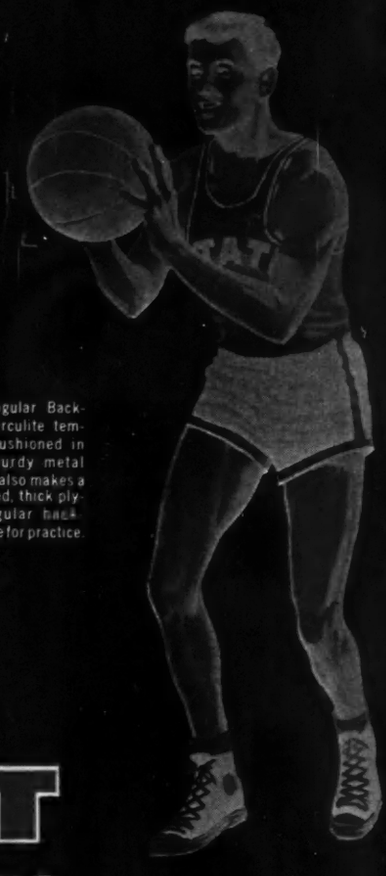
Informative folder available. For complete details on this remarkable product, see our Sprayed "Limpet" Asbestos folder in your *Sweet's Architectural File*, or write to us.

KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA

K&M best in asbestos®

Every one is Tailored-To-The-Job!

Official Rectangular Backboard. ½" Herculite tempered glass cushioned in Neoprene. Sturdy metal frame. Medart also makes a ruggedly framed, thick plywood rectangular backboard, a favorite for practice.



MEDART

BASKETBALL BACKSTOPS

First, they're built right — rugged, durable, rigid, vibration-free — to provide the finest possible accurate, quick-bank playing surface.

Next, they're properly erected. Structural conditions are analyzed by engineering experts; then playing requirements and other factors, including budget, are considered to be sure the *right* backstop is selected. Finally, each is "Tailored-To-The-Job" and expertly erected to guarantee a completely official and satisfactory installation.

Backstops may look alike but it's the many extra years of trouble-free, maintenance-free service that proves every dollar invested in Medart Backstops is a dollar better spent.

Write For Catalog

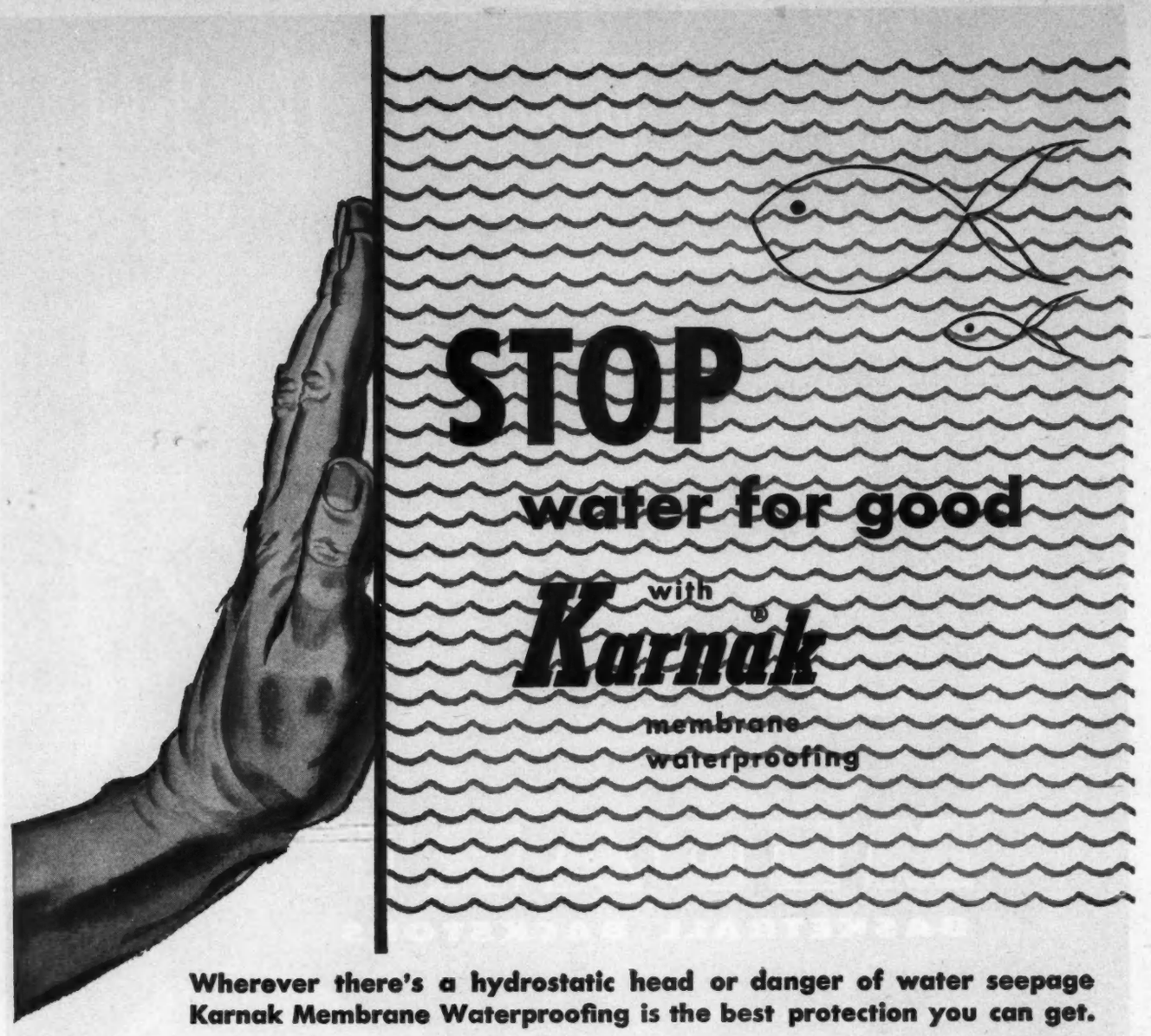
Official Fan-Shaped Backboard. Herculite tempered glass cushioned in Neoprene. Double angle welded frame. Will replace any Medart fan-shaped steel backboard. (Not shown) Medart's famous Official fan-shaped steel backboard built of a single 12-gauge shell, channel reinforced.

SPECIFY **the best, then** ***INSIST*** **on it!**

FRED MEDART PRODUCTS INC.

3540 DeKalb St. • St. Louis 18, Mo.

Medart — SEE OUR CATALOG IN SWEET'S



Wherever there's a hydrostatic head or danger of water seepage Karnak Membrane Waterproofing is the best protection you can get.

Karnak membrane fabric is saturated so that it is non-sticking and unrolls easily... to the very end. There is no waste. It "works" faster, lays on wrinkle-free...saves labor cost on the job.

Open mesh, long-fiber-cotton cloth, saturated with specially prepared asphalt so as to leave the mesh open, is layered on the job with alternate moppings of highly refined, ductile asphalt. The open mesh allows the mopping asphalt to penetrate and interlock the layers. This provides a firm, mechanical bond that resists abrasions, settling and cracking thus maintaining water resistance through the life of the structure.

The layering of fabric and asphalt is the only method of waterproofing that insures proper thickness of asphalt throughout the application. For normal application with hydrostatic head up to 15 feet, two plies of fabric are sufficient; hydrostatic head of 15 to 20 feet takes three plies; four plies are sufficient to waterproof any class of work regardless of hydrostatic head.

Whatever *your* waterproofing problem, Karnak will prove best. Bridges, buildings, tunnels, retaining walls, viaducts, swimming pools, all need and use Karnak. The Merchandising Mart, Chicago, Ill., used Karnak over twenty-five years ago...the Fairless Works of U.S. Steel used it last year. Specify Karnak on your next waterproofing job.

Karnak®

manufactured by

Lewis Asphalt Engineering Corp., 30 Church St., New York 7, N.Y.

Dept. 112

Asphalt Roof Coatings and Cements • Caulking Compounds • Asphalt Emulsions • Tile Cement
Asphalt Paint • Wood Block Mastic • Joint Filler • Aluminum Asphalt Roof Coating

© L. A. E. Corp.

Avoncraft

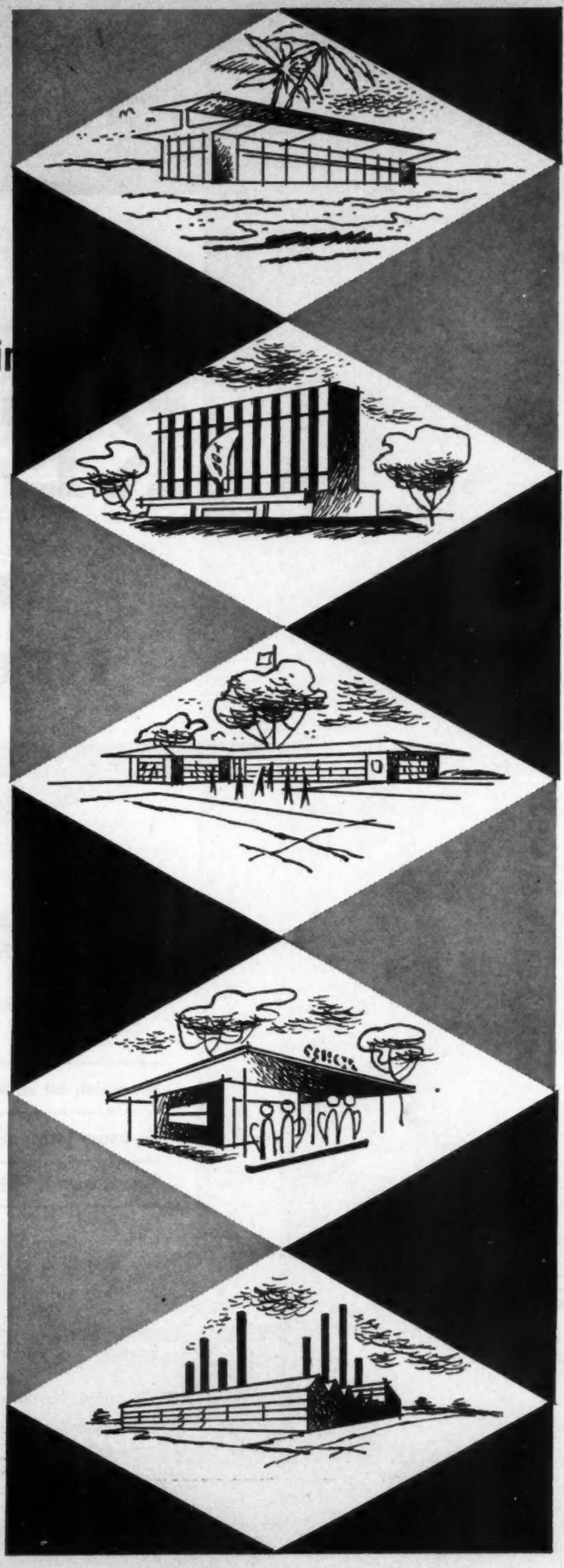
Porcelain Enamel

a product to change the buildi of the nation . . .

For commercial buildings such as service stations, auto laundries and motels, Avoncraft architectural porcelain enamel is the "new look" in construction materials. It's a building product of the future—here today! The gleaming and colorful porcelain surface is an eye-catcher—and extremely durable. Avoncraft porcelain enamel, with its ultra-modern look and maintenance-free features, is a material with which you can pioneer . . . hospitals, schools, freight stations and industrial and commercial applications of many kinds are ideally suited to porcelain enamel design. Consult our Avoncraft engineers for full details.

Write Today!

Avonda ays, Inc.
P. O. Box 1030 Orleans 8, U.S.A.



look how KEYMESH

Galvanized reinforcing lath

multiplies fire resistance

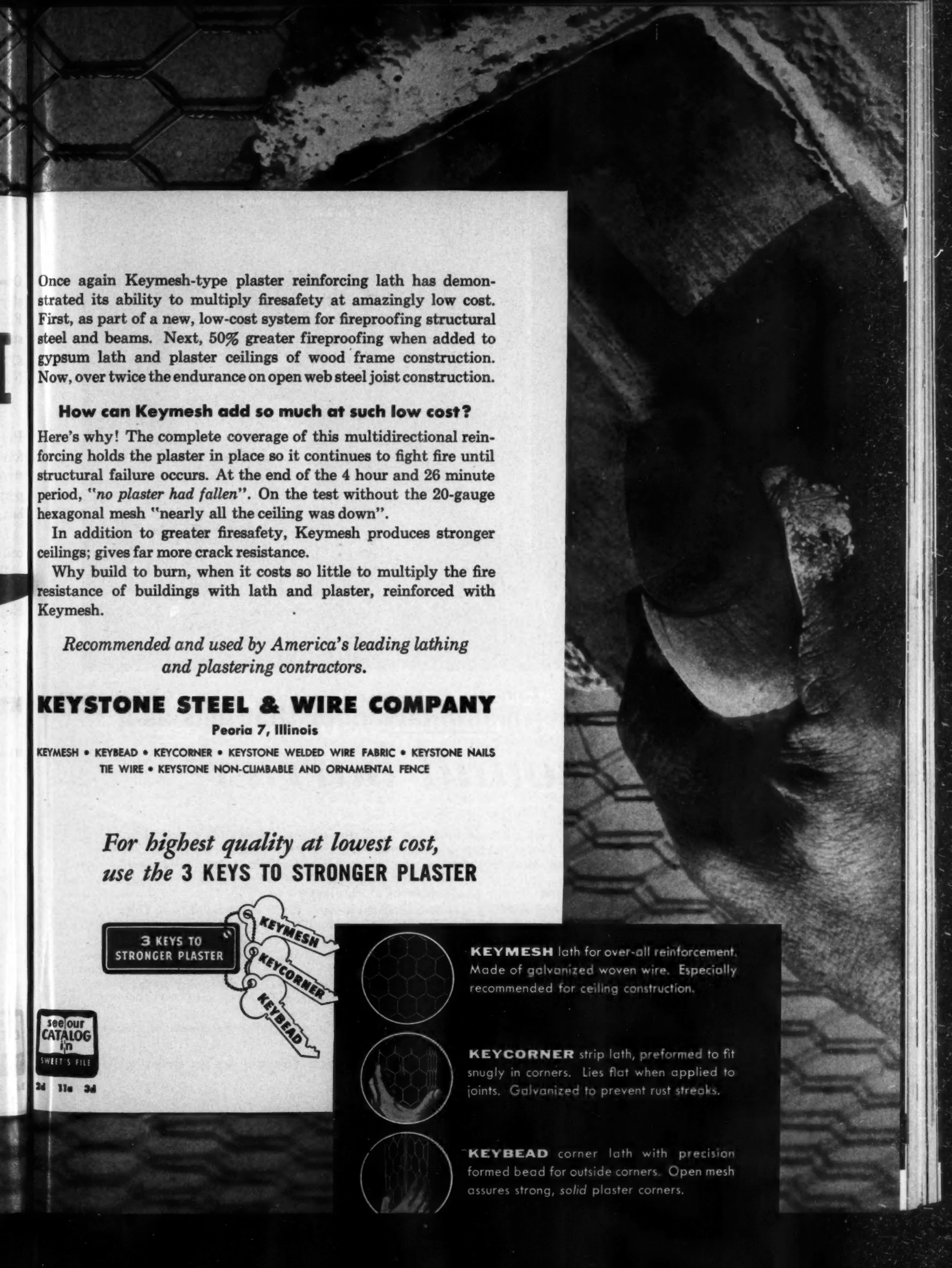
Ceiling Fire Endurance Test of Open Web Steel Joist Floors with Concrete Slabs and Gypsum Ceilings.*

	Fire endurance limit—
No finish on ceiling	7 min.
Gypsum lath and plaster ceiling added[1]	1 hr. 43 min.
Same, with **KEYMESH**-type reinforcing lath added[2]	4 hr. 26 min.

1. ⅜" gypsum lath covered with 1⅛" of gypsum plaster with expanded perlite aggregate.

2. ⅜" gypsum lath, reinforced with 20-gauge, 1" hexagonal mesh; then covered with only 1" of gypsum plaster with expanded perlite aggregate. The use of hexagonal mesh fabric in ⅞ in. ceiling (⅜" gypsum lath; ½" plaster) gave *almost four times* the resistance obtained without, the report states.

*Building Materials and Structures Report 141 National Bureau of Standards



Once again Keymesh-type plaster reinforcing lath has demonstrated its ability to multiply firesafety at amazingly low cost. First, as part of a new, low-cost system for fireproofing structural steel and beams. Next, 50% greater fireproofing when added to gypsum lath and plaster ceilings of wood frame construction. Now, over twice the endurance on open web steel joist construction.

How can Keymesh add so much at such low cost?

Here's why! The complete coverage of this multidirectional reinforcing holds the plaster in place so it continues to fight fire until structural failure occurs. At the end of the 4 hour and 26 minute period, "*no plaster had fallen*". On the test without the 20-gauge hexagonal mesh "nearly all the ceiling was down".

In addition to greater firesafety, Keymesh produces stronger ceilings; gives far more crack resistance.

Why build to burn, when it costs so little to multiply the fire resistance of buildings with lath and plaster, reinforced with Keymesh.

Recommended and used by America's leading lathing and plastering contractors.

KEYSTONE STEEL & WIRE COMPANY

Peoria 7, Illinois

KEYMESH • KEYBEAD • KEYCORNER • KEYSTONE WELDED WIRE FABRIC • KEYSTONE NAILS
TIE WIRE • KEYSTONE NON-CLIMBABLE AND ORNAMENTAL FENCE

For highest quality at lowest cost, use the **3 KEYS TO STRONGER PLASTER**

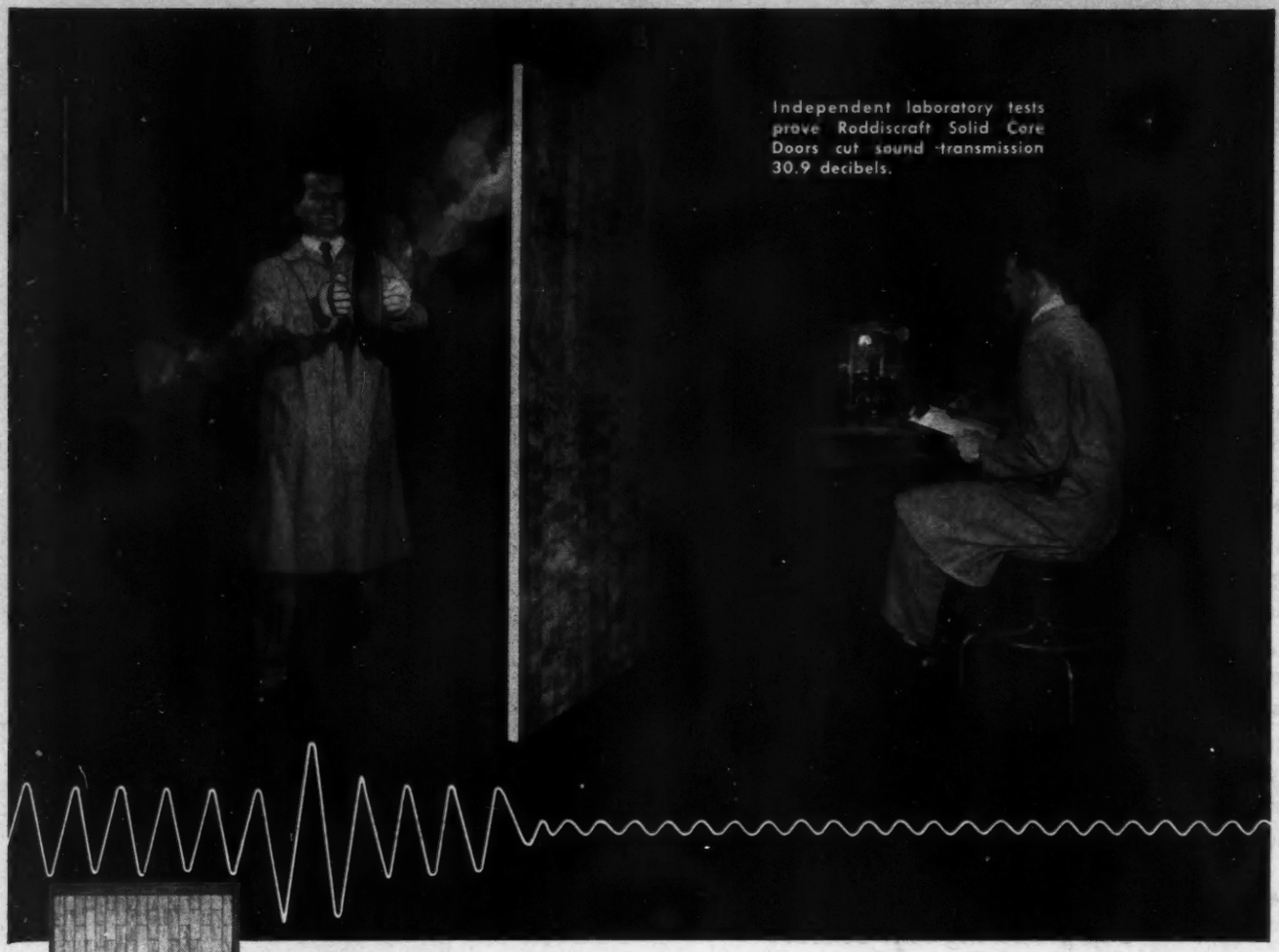
see our CATALOG in SWEET'S FILE
2d 11a 3d

KEYMESH lath for over-all reinforcement. Made of galvanized woven wire. Especially recommended for ceiling construction.

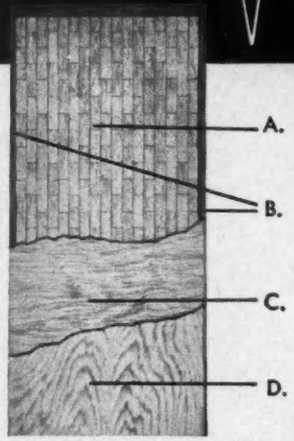
KEYCORNER strip lath, preformed to fit snugly in corners. Lies flat when applied to joints. Galvanized to prevent rust streaks.

KEYBEAD corner lath with precision formed bead for outside corners. Open mesh assures strong, *solid* plaster corners.

Roddiscraft — *quality wood craftsmanship for over 60 years*



Independent laboratory tests prove Roddiscraft Solid Core Doors cut sound transmission 30.9 decibels.



A. Cores — low density wood blocks glued under pressure with water resistant resin glue

B. Edge strips — double thickness top and bottom; side edge strips match face veneers

C. Crossbandings—hardwood veneer glued with waterproof phenolic resin glue to both sides of core

D. Face veneers — selected face veneers glued with phenolic resin glue to both sides of the door and belt-sanded smooth

Now—a standard door that acts as a *sound barrier*

. . . cuts sound transmission 30.9 decibels — Here's the practical answer for every installation where quiet is required. Roddiscraft Solid Core Doors are ideal for hospitals, hotels, schools, churches, apartments, homes and office buildings . . . cut sound transmission almost as much as specially-constructed "sound-proof" doors of much greater cost.

Core, crossbanding and face veneers on every Roddiscraft Solid Core Door are welded into a single unit. Result: Strength and durability that's unsurpassed by any other wood door on the market. And Roddiscraft's quality construction makes these doors waterproof . . . fire resistant, too, for up to 40 minutes.

Get all the facts on Roddiscraft Solid Core Doors. Write today for new bulletin. Or see our catalog in Sweet's Architectural File.

Roddiscraft — one source for all your door needs

Roddis Plywood Corporation, Marshfield, Wis.

Warehouses in Principal Cities

SEALS LIKE A REFRIGERATOR

LUDMAN Auto-Lok AUTOMATIC LOCKING WINDOWS

LUDMAN LEADS IN WINDOW ENGINEERING

THIS GREAT WINDOW HAS ESTABLISHED STANDARDS BY WHICH ALL ALUMINUM AWNING WINDOWS MUST BE MEASURED

No matter what the standards by which aluminum awning windows are measured, the Ludman Auto-Lok always emerges as first choice. For this superb window established such high standards in its field, that in all its years of top performance no other window has come close enough to give the phrase "or equal" any meaning. This product clearly stands alone in the field of awning windows.

Auto-Lok is the *only* window that fully meets *all* of the ten most important requirements in a window that experts agree are essential. Here is a window that only Ludman can produce . . . . the foundation upon which the fine family of Ludman products has been built.

The Auto-Lok Window permits complete control over both the quantity and the quality of ventilation. Fresh air is assured, even when it's raining. The bottom night vent **insures** ventilation with complete protection . . . . protection from the elements . . . . protection from prowlers.

The Auto-Lok Window is the tightest-closing window ever made — and *only* Auto-Lok will stay *tightly closed* for the life of the building without the periodic adjustment required by all other awning windows. Completely weatherstripped, the Auto-Lok Window is an ideal solution when True Climate Control is sought. *Permanently weathertight* — it seals out both heat and cold, and substantially reduces demands upon Air-Conditioning systems and Heating plants.

Quality-Controlled from raw aluminum to finished window, the Auto-Lok is the most nearly perfect window the resources of Ludman Corporation can produce.

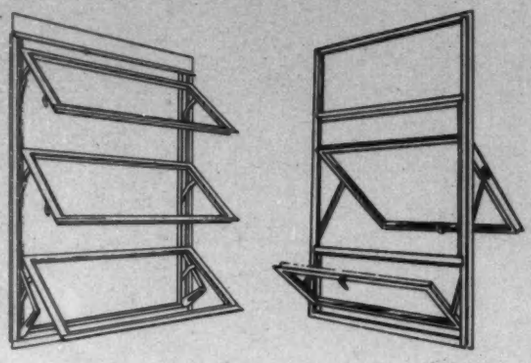
"Geoffrey Baker and Bruno Funaro in "Windows in Modern Architecture"

AUTO-LOK WINDOWS CONFORM TO THE RECOMMENDATIONS OF THE AMERICAN INSTITUTE OF ARCHITECTS, MODULAR COORDINATION OFFICE.

(SEE NEXT PAGE) . . . . . .

IMPORTANT NEW PROOF THAT

LUDMAN LEADS IN *window engineering*



"... your aluminum awning and intermediate projected windows are in accord with my recommendation, as Modular Coordinator, for windows to be installed in modular masonry walls."

William Demarest, Jr.
Modular Coordinator
American Institute of Architects

LUDMAN *Introduces*

WINDOW SIZES BASED UPON MODULAR MEASURE

Ludman takes the lead with a forward step of major significance to many architects. In commenting upon this important step, Mr. Demarest writes:

"The Ludman Corporation is to be congratulated for introducing window sizes based upon Modular Measure, the common-sense method of dimensioning which is being adopted by a fast-growing number of architects, builders and manufacturers of masonry and other building products."

This is just one more evidence of Ludman engineering leadership . . . just one more example of the foresighted kind of planning that has made Ludman products the instinctive first choice of so many progressive architects.

Ludman leadership in adapting design to Modular Sizing is a reflection of the thoroughness with which every Ludman product is planned and produced. From raw aluminum to finished product, Ludman products are produced under strict quality control. Every Ludman product is engineered to perform its task easily, to operate smoothly, and to insure the long operating life that delivers real economy.

Uniform load tests and Hardware load tests were made on a window 4'-0⅞" wide and 8'1" high with 4-lite ventilators, which is the largest standard intermediate projected window as shown in our catalog.

Air infiltration tests were conducted on window units with 4-lite ventilators measuring 4'0" wide and 2'8" high— the largest opening ventilator as shown in our catalog.

Our interpretations of these tests reveal the following results:

10 Times Tighter

Ludman Intermediate Projected Windows allow only 1/10 as much air leakage as windows that only meet AWMA P-A2 specifications. This means reduced heating and air-conditioning costs. Tables are now available that prove how quickly these savings are reflected in the Operating Budget of a building. LUDMAN LEADERSHIP IN WEATHER-STRIPPED WINDOWS MEANS LASTING SAVINGS!

4 Times Stronger

Ludman engineers have established that a good Projected Window needs this added strength to insure proper performance.

4½ Times Stronger

The vital operating hardware in the Ludman Intermediate Projected Window is built to withstand daily abuse.

ALSO AVAILABLE IN STANDARD ARCHITECTURAL SIZES

PITTSBURGH TESTING LABORATORY

ESTABLISHED 1881

PITTSBURGH, PA.

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LABORATORY

FILE

68

7461

REPORT

February 7, 1955

Report on Tests Conducted on

LUDMAN WEATHERSTRIPPED INTERMEDIATE PROJECTED WINDOW UNITS

For LUDMAN CORPORATION, North Miami, Florida

TEST RESULTS

The results of the air infiltration, uniform load and hardware load tests along with the specification maximum permissible requirements were reported below.

AIR INFILTRATION TEST

The air infiltration determined on the as received window unit in accordance with the procedure indicated in Paragraph 2.8.3.2 of Aluminum Window Manufacturers Association Specification P-A2 was determined to be 0.09 cubic feet per minute per foot at a static pressure equivalent to a wind velocity of 25 miles per hour.

Specification maximum permissible was 1.00 cubic feet per minute per foot.

UNIFORM LOAD TEST

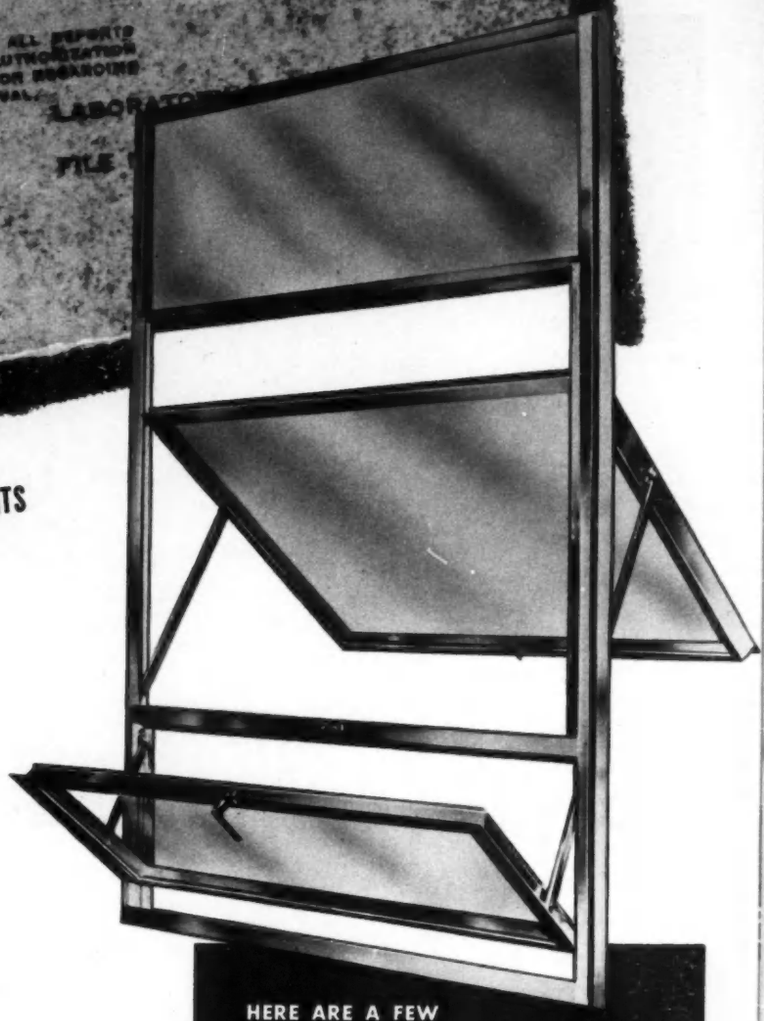
The maximum deflection of any window member under a load of 15 pounds per square foot as indicated in Paragraph 2.8.3.1B of Aluminum Window Manufacturers Association Specification P-A2 was determined to be 0.068 inches.

Specification maximum permissible was 0.274 inches.

HARDWARE LOAD TEST

The deflection at the free corner of the ventilator with friction shoes adjusted to a firm, but smooth, operating condition when tested as indicated in Paragraph 2.8.3.1A was determined to be 7/8 inches.

Specification maximum permissible was 3-1/2 inches.

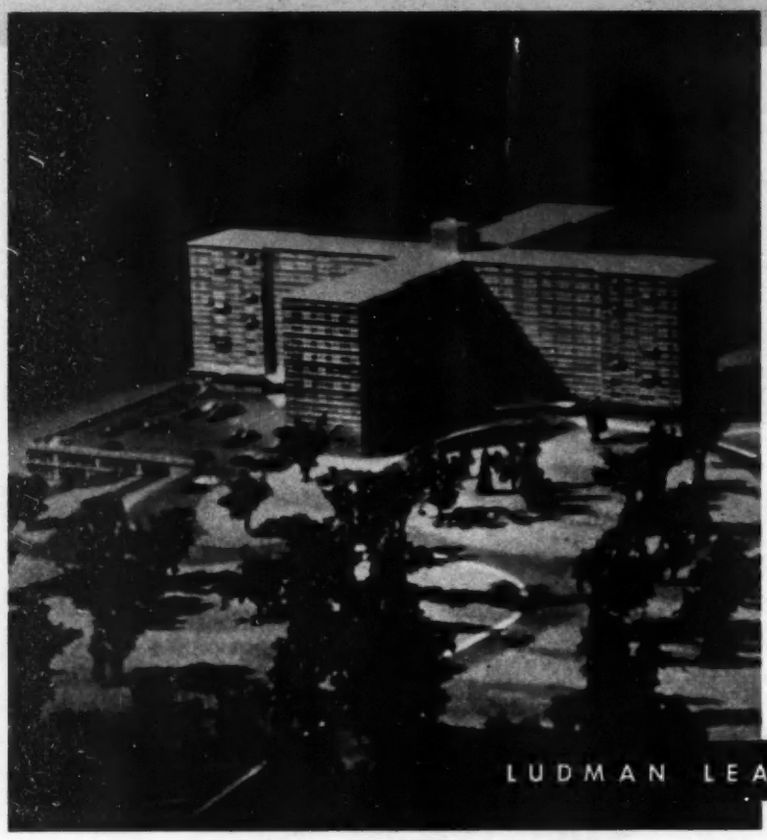


HERE ARE A FEW OF THE ADDED FEATURES THAT PROVE LUDMAN'S SUPERIORITY IN WINDOW ENGINEERING

- White Bronze Corner Brace For Vents
- Adjustable Friction Shoe Compression Spring
- Windows Can Be Inside or Outside Bead or Mastic Glazed
- Hardware & Screws Attached With Threaded Grommets
- Cam Handle With Concealed Strike For Project-In Vents
- Mullion Bars Provide Caulking Pocket For Weathertight Construction
- Mullions Fluted Vertically For Appearance and Strength
- Completely Weatherstripped

SEND COUPON ON NEXT PAGE....

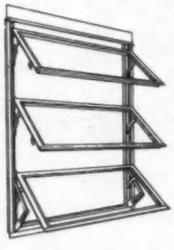
LUDMAN *Window Panels*



. . . . ANOTHER DEVELOPMENT OF LUDMAN ENGINEERING

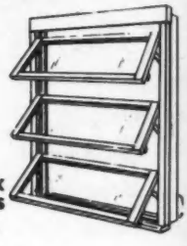
Skin-wall . . . Curtain-wall . . . Panel-wall. To assist the progressive architects who are seeking new methods of gaining beauty and utility, while reducing construction costs, through these new building techniques, Ludman is proud to introduce **Ludman Window Panels.** An extremely efficient, very versatile, and thoroughly practical approach to a new construction method, Ludman Window Panels offer you almost unlimited scope in planning. **Consult Ludman engineers for full cooperation in developing your next building** . . . from the inception of the sketches to the final step in construction, **Ludman engineers are at your service.**

LUDMAN LEADS IN WINDOW ENGINEERING



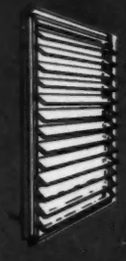
LUDMAN AUTO-LOK ALUMINUM AWNING WINDOWS

The window industry's most outstanding development . . . . the window that has solved so many of the architect's problems.



LUDMAN AUTO-LOK WOOD AWNING WINDOWS

The same Ludman quality . . . . the same tight closure . . . . available in wood windows through jobbers everywhere.

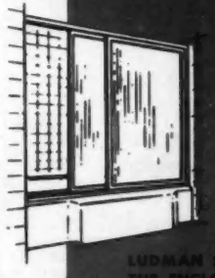


LUDMAN JALOUSIES

Ludman engineering has added many technical improvements to jalousie windows than any other company . . . . protected a jalousie you can specify with confidence.

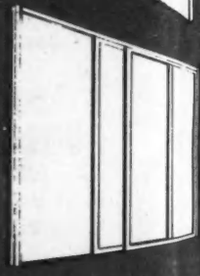
LUDMAN JALOUSIES IN DOORS

Ludman engineered jalousies available also in doors.



LUDMAN ALL-WEATHER ALUMINUM SLIDING GLASS DOORS

Built to high Ludman standards . . . the only door so completely weather-tight as to be suitable for all climate use.



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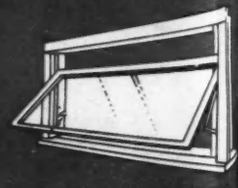
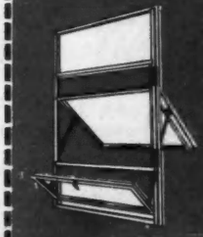
Top quality fibreglass panels set in beautiful Anodized Aluminum Frames. LUDMAN QUALITY CONTROLLED.





LUDMAN SINGLE SASH WOOD AWNING WINDOWS

A Single Sash Wood Unit with extraordinary design flexibility. Handled by wood jobbers everywhere.

LUDMAN INTERMEDIATE ALUMINUM PROJECTED WINDOW

The finest Projected Window ever made . . . . completely weatherstripped — engineered to high LUDMAN standards.

YOUR PRESTIGE IS REFLECTED IN THE PRODUCTS YOU SPECIFY

The architect, as do other professional men, cherishes his prestige . . . knows it as his most valuable asset. Fine products . . . products that look better . . . perform better . . . perform well and economically for the life of the building — these are major factors in supporting the reputation of the architect. And the best products cost so little more to install . . . cost so much less across the years. Protect *your* prestige when you specify!

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Auto-Lok Aluminum Awning Windows ☐ Wood Auto-Lok Awning Windows ☐
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Shower Door Tub Enclosures ☐ Intermediate Aluminum Projected Windows ☐
Single Sash Wood Awning Windows ☐

Name.....Firm.....

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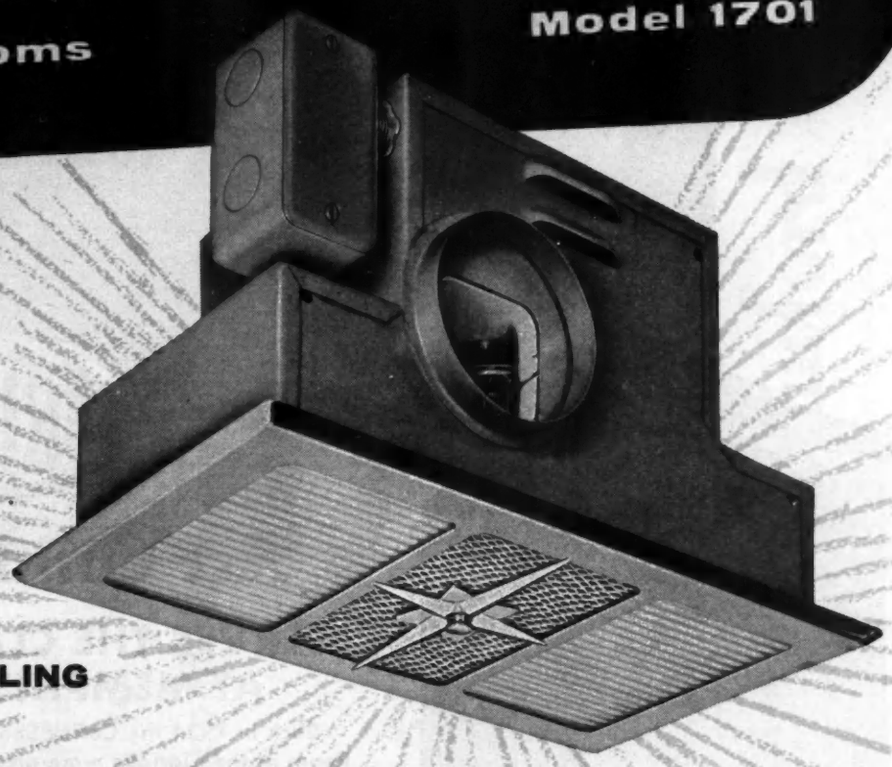
Revolutionary... New...

TRADE-WIND

VENTILATOR/LIGHT COMBINATION UNIT

for Bathrooms

Model 1701



HANDSOME CHROME AND GLASS DESIGN...

MOUNTS FLUSH IN CEILING

OFFERS UNUSUAL APPEAL TO HOME BUYERS

Another outstanding *first* from Trade-Wind! A combination bathroom ventilator and illuminator beautifully designed in a flush-type ceiling unit. Two 75-watt bulbs provide brilliant illumination. And the time-tested Trade-Wind 100 CFM blower unit assures complete ventilation—for both inside and outside baths—eliminating steam, lingering dampness and odors.

Easiest to install...

Trade-Wind Model 1701 *installs between joists* and the single installation gives you both light and ventilation, thus cutting installation expense. *The unit is pre-wired,* further eliminating extra work in running asbestos leads. It can be wired to a single switch or 3 wires run to a double switch. The Trade-Wind Time-Delay Switch also can be used.

The PRICE will surprise you!

Trade-Wind has priced the Model 1701 at a rock bottom figure, making this new light/ventilator combination an outstanding "buy" for every type of home.

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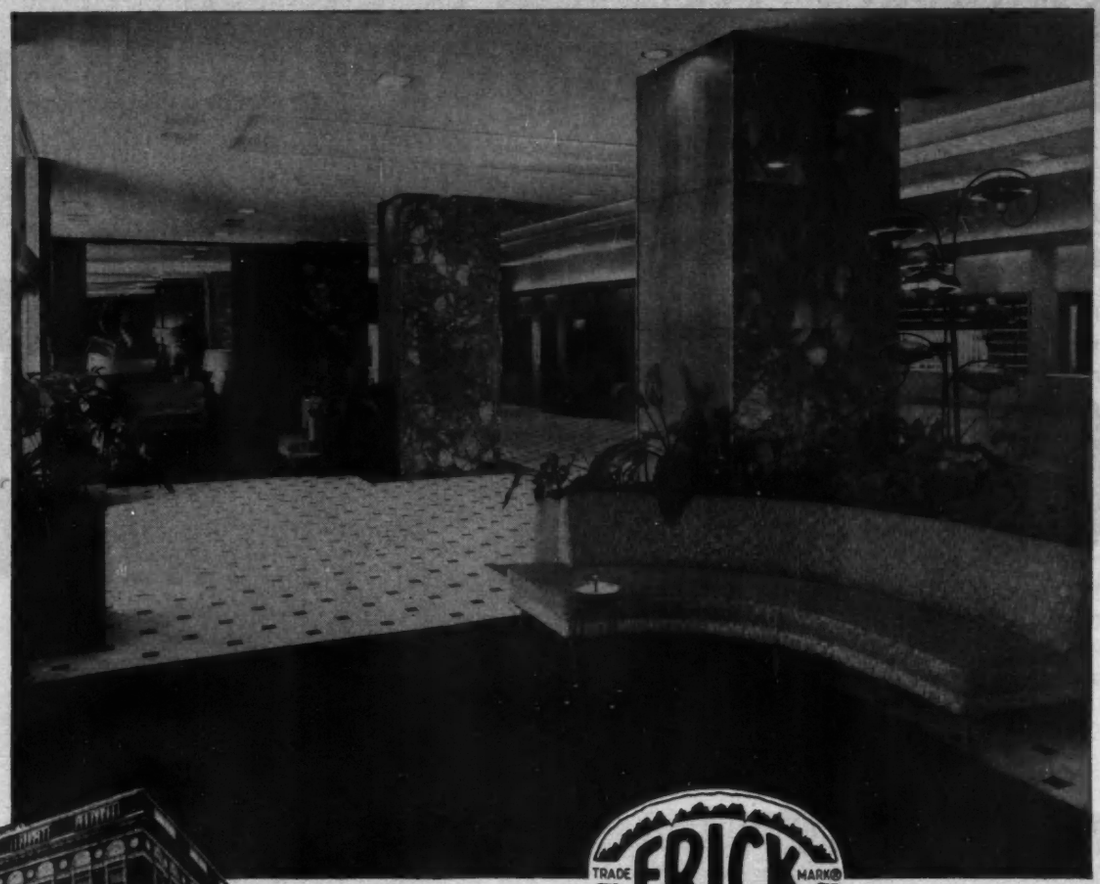

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What a boon to guests and staff, alike! And what a tribute to Frick equipment, which cools the entire 15-story building! Seven Frick heavy-duty compressors carry the load.

Whether you operate a hotel, restaurant, hospital, store, office, or industrial plant, there's a Frick air conditioning system to meet your exact needs. Also refrigerating, ice making and quick-freezing equipment in all commercial and industrial sizes. Our complete engineering, manufacturing, installation and maintenance service is offered alike to owners and to engineer-contractors. Get literature and estimates now on dependable Frick air conditioning and refrigeration. Visit, phone or write

Frick Bulletin 504 features general air conditioning; 505 shows engineering details of Frick systems; 522 describes Frick unit air conditioners. See also the Frick pages in Sweet's Catalogs.

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NATIONAL FOOD STORES MILWAUKEE DISTRIBUTION CENTER speeds heavy truck traffic with 19 Crawford Industrial Doors equipped with Electric Operators

National Tea Co. branch office and warehouse in Milwaukee is a typical modern industrial structure in which functional efficiency and good design are competently combined. The building is of steel and masonry construction and is 574 feet long, 399 feet wide and 16 feet high. It encloses approximately 230,000 square feet of floor space. As a branch warehouse for National Tea Co. which supplies all the merchandise for the National Food Stores in Wisconsin and Upper Michigan, it handles merchandise traffic up to 500 tons a day in about 100 vehicles.

To accommodate this traffic, the building is equipped with 12 — 18′0″ x 14′0″ and 7 — 12′0″ x 14′0″ Model SLA Crawford Marvel-Lift Industrial Doors, all equipped with electric operators with local and remote controls. Because of the sturdy construction of these doors and the cushioned operation achieved through the use of electric operators (always easier on doors than manual operation) these doors are in excellent condition after three years of constant use. If you have a door problem, we'll welcome your inquiry and it will get quick, intelligent attention.

Architects, write for complete file of Crawford literature including the Crawford 60-Second Door Selector, the easiest-to-use door manual ever published. Crawford Door Company, 175-20263 Hoover Road, Detroit 5, Michigan. Plants in 10 cities; Warehouses in 95 cities; Sales and Service everywhere. In Canada, F. Fentiman & Sons Ltd., Ottawa, Ontario.

National Tea Co., Milwaukee, Wis.

Architect and Engineer: **Lefebvre & Wiggins, Milwaukee**

Contractors: **W. W. Oeflein Inc., Milwaukee**

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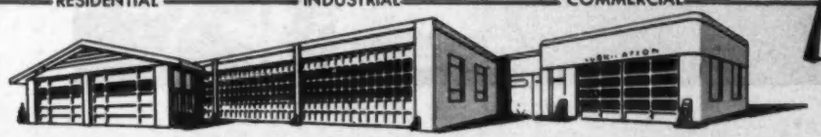
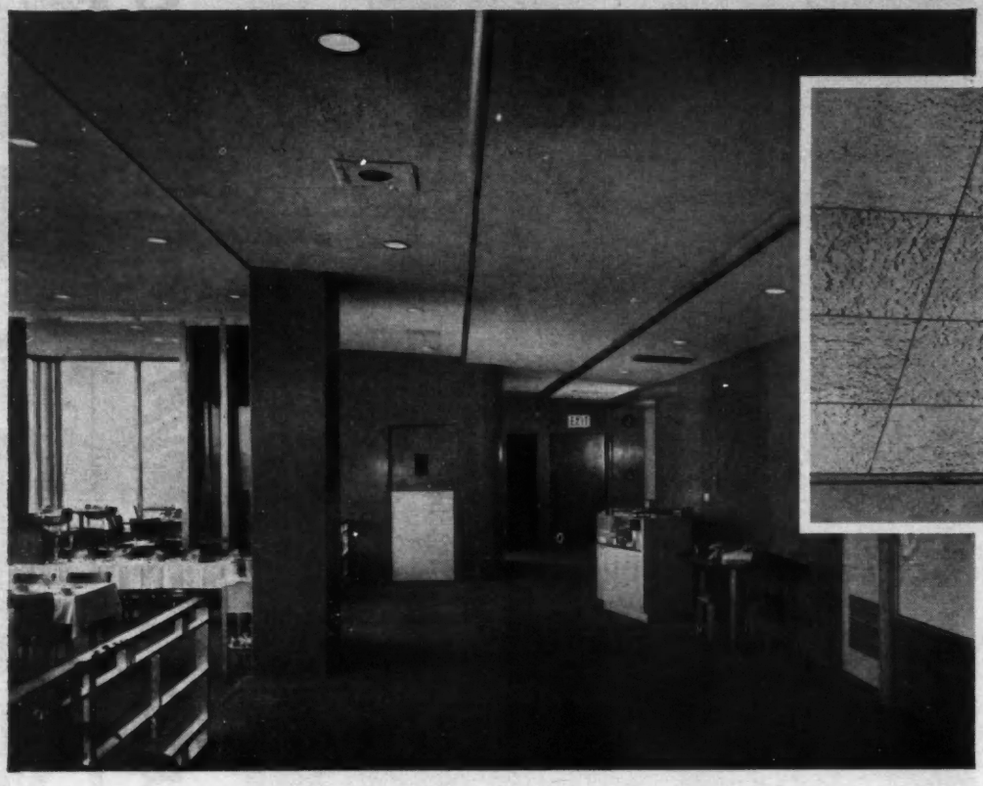
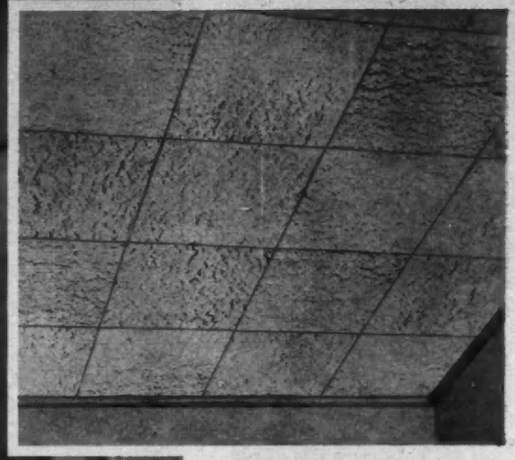


SEE OUR CATALOG IN SWEET'S

25th YEAR





The Johns-Manville Permacoustic Ceiling in the beautiful Bradley Airport Terminal restaurant provides quiet and comfort despite noisy aircraft traffic outside.

A beautiful Solution

TO NOISE-CONTROL PROBLEMS...

Johns-Manville Permacoustic

decorative acoustical tile

Specify J-M Permacoustic® tile for ceilings that provide unusual architectural beauty with maximum acoustical efficiency and noncombustibility.

Johns-Manville Permacoustic is available with either a textured or fissured surface. These random-textured finishes increase its high sound-absorbing qualities, and provide design and decorative interest.

Made of baked mineral wool fibres, Permacoustic is rated incombustible. It is easy to install on existing ceilings or slabs, or by suspension using a spline system of erection.

Send for your free copy of the new brochure about Permacoustic tile. Write Johns-Manville, Box 158, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.

See "MEET THE PRESS" on NBC-TV, sponsored on alternate Sundays by Johns-Manville

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Sizes 12" x 12" 12" x 24" | Thickness ¾"* | Color: white

	ACOUSTICAL EFFICIENCY Test No. A55-88	Test No. A55-87
cycles per second	cemented to plaster board (mounting No. 1)	mechanically mounted on special metal supports (mounting No. 7)
125	.18	.56
250	.35	.64
500	.83	.77
1000	.86	.92
2000	.82	.99
4000	.77	.89
noise reduction coefficient	.70	.85
weight per sq. ft.	1.3	1.3

*Also available in ⅞" thickness

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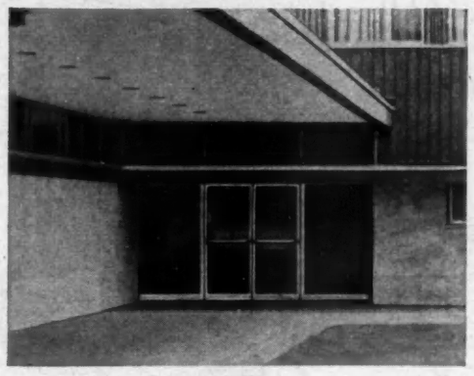
40 YEARS OF LEADERSHIP IN THE MANUFACTURE OF ACOUSTICAL MATERIALS

Typical Brasco Entrance Installations

*at the M. D. Anderson Hospital for Cancer Research**



**"The most modern, most ingeniously designed hospital in the U.S."...* TIME MAGAZINE, Dec. 13, 1954

Location
Houston, Texas

Architects
Mac Kie & Kamrath

Consulting Architects
Schmidt, Garden & Erikson, Chicago

General Contractors
Farnsworth & Chambers, Inc.

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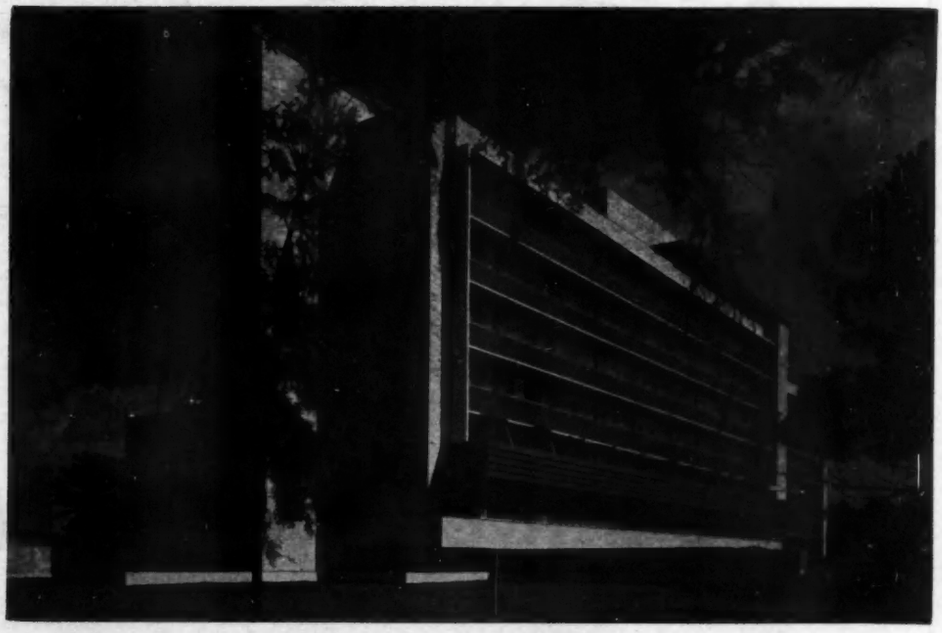

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ENTRANCES

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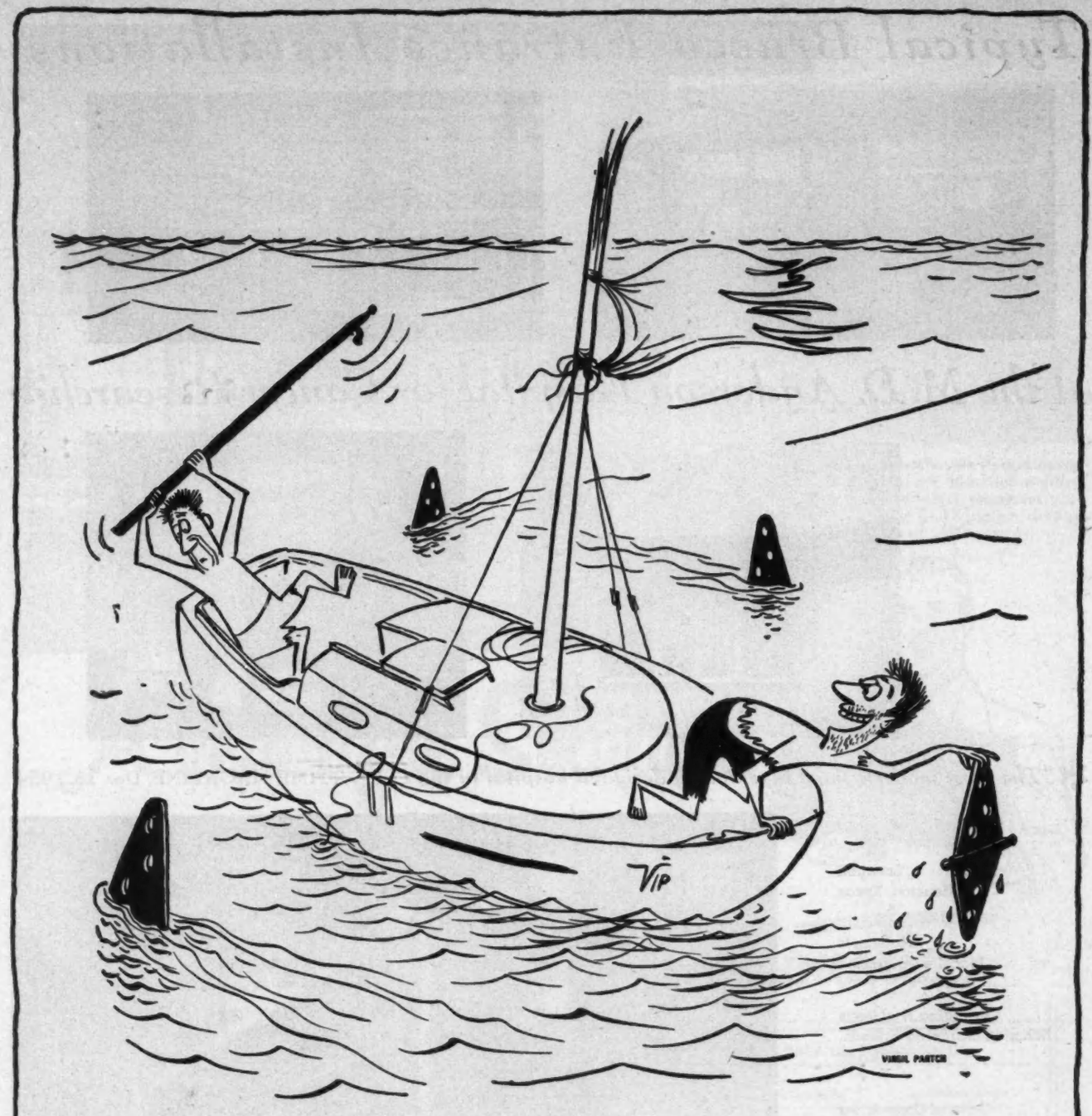
Metal Store Front Specialists for more than 40 Years



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Founded 1849—Every Hager Hinge Swings on 100 Years of Experience

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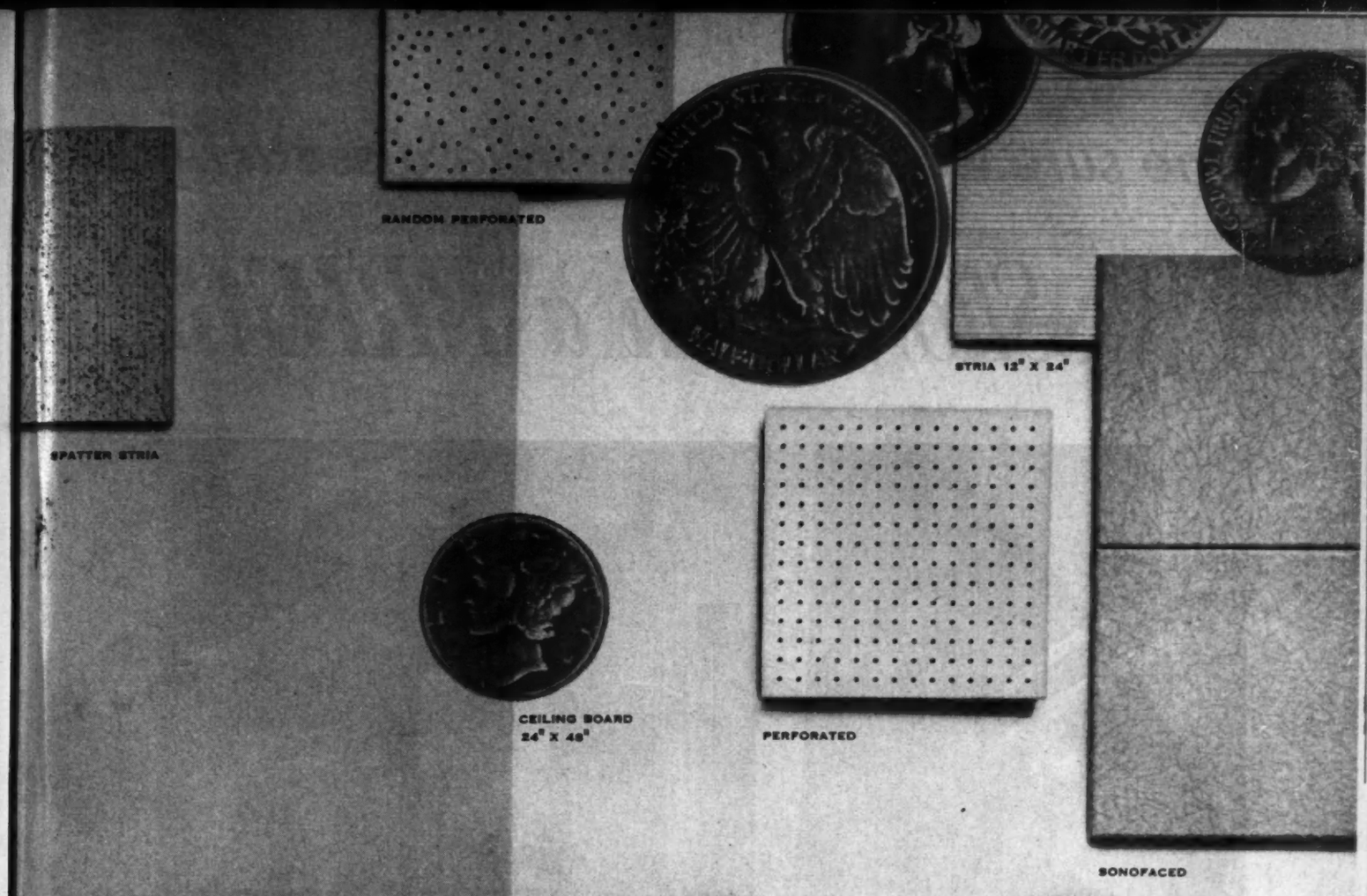


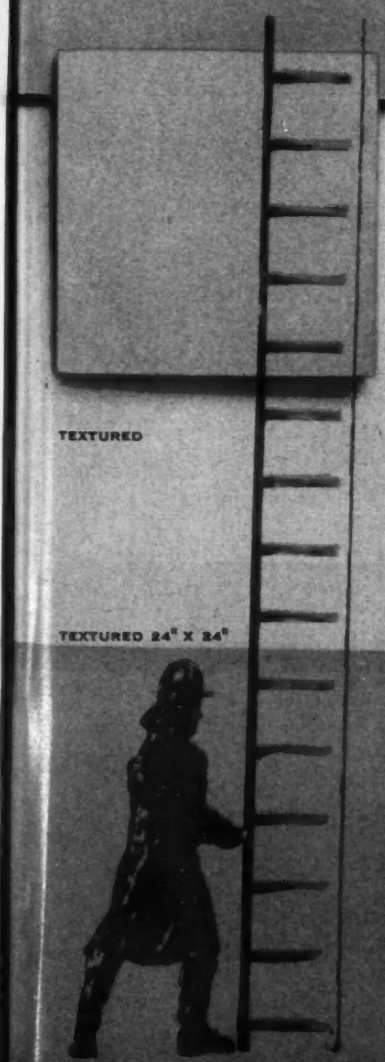
the low-cost ceilings

with a built-in fire department!

Did you realize that Fiberglas* Sound Control Products offer the lowest-cost fire-safe acoustical ceilings on the market? And there's a wide line of patterns, textures and colors available; ceilings to fit every building budget, every decor.

The savings continue through long years of service—easily installed, easily maintained, the inorganic ceilings won't shrink or swell, bag or sag. If you'd like to know more about extra-value Fiberglas Sound Control Products, write: Owens-Corning Fiberglas Corporation, Dept. 68-H, Toledo 1, Ohio.

*T. M. Reg. Owens-Corning Fiberglas Corporation

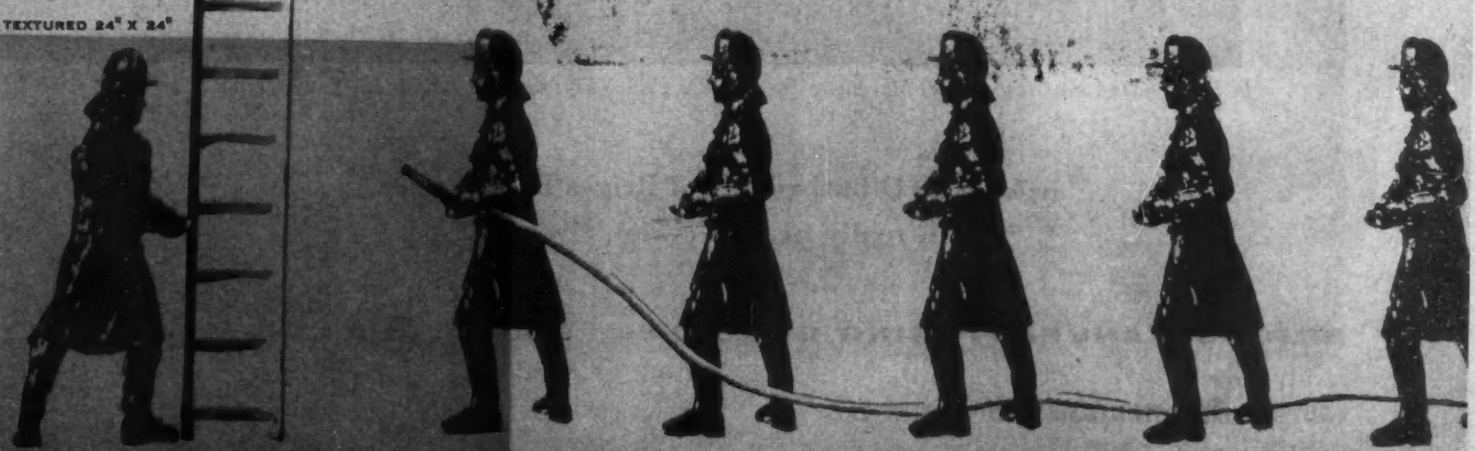


OWENS-CORNING

FIBERGLAS

SOUND CONTROL PRODUCTS

- Textured, Perforated, Sonofaced*, Stria* Acoustical Tile
- Textured, Sonofaced Ceiling Board • Noise-Stop* Baffles



One sure way to make people dissatisfied

Show them a BRIGGS

In Beautyware Sea Green: B300 Marquette Tub, B6420 Prince Closet, Twin B3500 HS Lowell Lavatories

—And TWO bathrooms of Briggs Beautyware will really help to clinch the sale!

BRIGGS MANUFACTURING CO. 300 Buhl Building, Detroit 26, Michigan

with their old homes ——

BEAUTYWARE bathroom

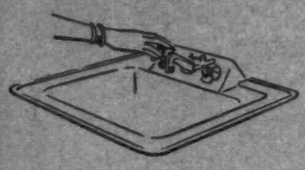
The bathroom (like the kitchen) has become one of the most important "showplaces" in the home. Also, it is often in the bathroom that *an old home shows its age most.*

That means that bathroom fixture design and styling are of greater importance today than ever before. A colorful, modern bathroom with new Briggs Beautyware dramatizes the disadvantages of the old home - - adds many powerful *extra* reasons for getting out of the old place, *and into the new one.*

The outstanding features listed below are making Briggs Beautyware the first choice of more and more value-minded builders, architects and plumbers - - more and more quality-conscious home owners and buyers.

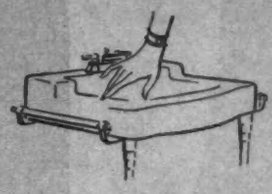
Newest Sea-tone Colors

The fresh, bright, unfading shades of Briggs fixtures add beauty and distinction to any bathroom—make decoration easy, impressive and tasteful.



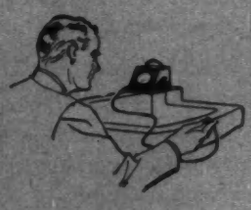
Trouble-Free Fittings

All Briggs fittings are specially designed, precision manufactured and thoroughly tested to assure a long life of enjoyable and dependable service.



Hi-Style Vitreous China

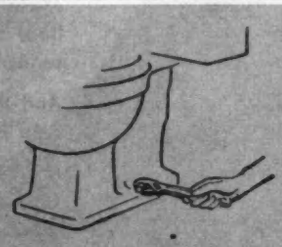
Vitreous china Beautyware is made from carefully selected clays—scientifically worked, glazed and fired to produce ceramics of highest quality.



Glass-Hard Surfaces

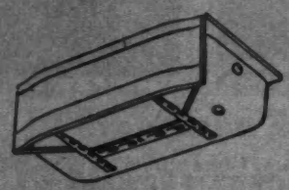
All Briggs fixtures—porcelain enameled steel or vitreous china—have glass-hard surfaces which are stain-proof and fade-proof—and so easy to clean.

Compare features with any other fixtures



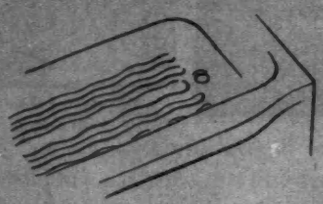
Time-Saving Installation

Beautyware offers builders and plumbers many exclusively designed features which facilitate installation and speed up home building schedules.



Rugged Construction

Beautyware fixtures—from rugged bathtubs of reinforced steel to sturdy fittings of quality brass—give a lifetime of satisfaction and service.



Safety-First Design

The exclusive safety bottom of Briggs bathtubs is a great safety feature. In addition are safety hand-grip, wide rim seat and leak-proof wall flange.

Superior Value

Beautyware quality is also economical —putting finest color fixtures and an extra bath or lavatory within reach of more people than ever before.

WHY DIDN'T BOTH BURN?

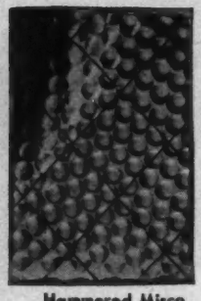
Mississippi Wire Glass Helps Protect Buildings Against Tragic, Costly Fires

When fire utterly gutted this building, it was unable to spread to the neighboring structure because Mississippi Wire glass windows, in metal frames, efficiently prevented windblown sparks and searing heat from reaching the interior. For though cracked by heat or smashed by a blow, wire glass tends to remain in the opening . . . continues to offer utmost protection at minimum cost.

And these same properties enable Mississippi Wire Glass (Approved Fire Retardant No. 32) to help bottle up fires and prevent them from roaring into a costly tragedy like that above.

Mississippi Wire Glass has saved many lives and millions of dollars' worth of property from fiery destruction. It is recommended for installation in windows, skylights, partitions, doors and in all other vulnerable locations where fire or breakage protection with daylighting is desired.

Fence out fire. Specify Mississippi Wire Glass . . . the original wire glass upon which the Underwriter's Standard was based . . . the standard today by which all others are judged. Available in hexagonal or Misco wire mesh in types for clear vision or diffusion, wherever quality glass is sold.



Hammered Misco Wire Glass

Smooth Rough Misco Wire Glass

Polished Misco Wire

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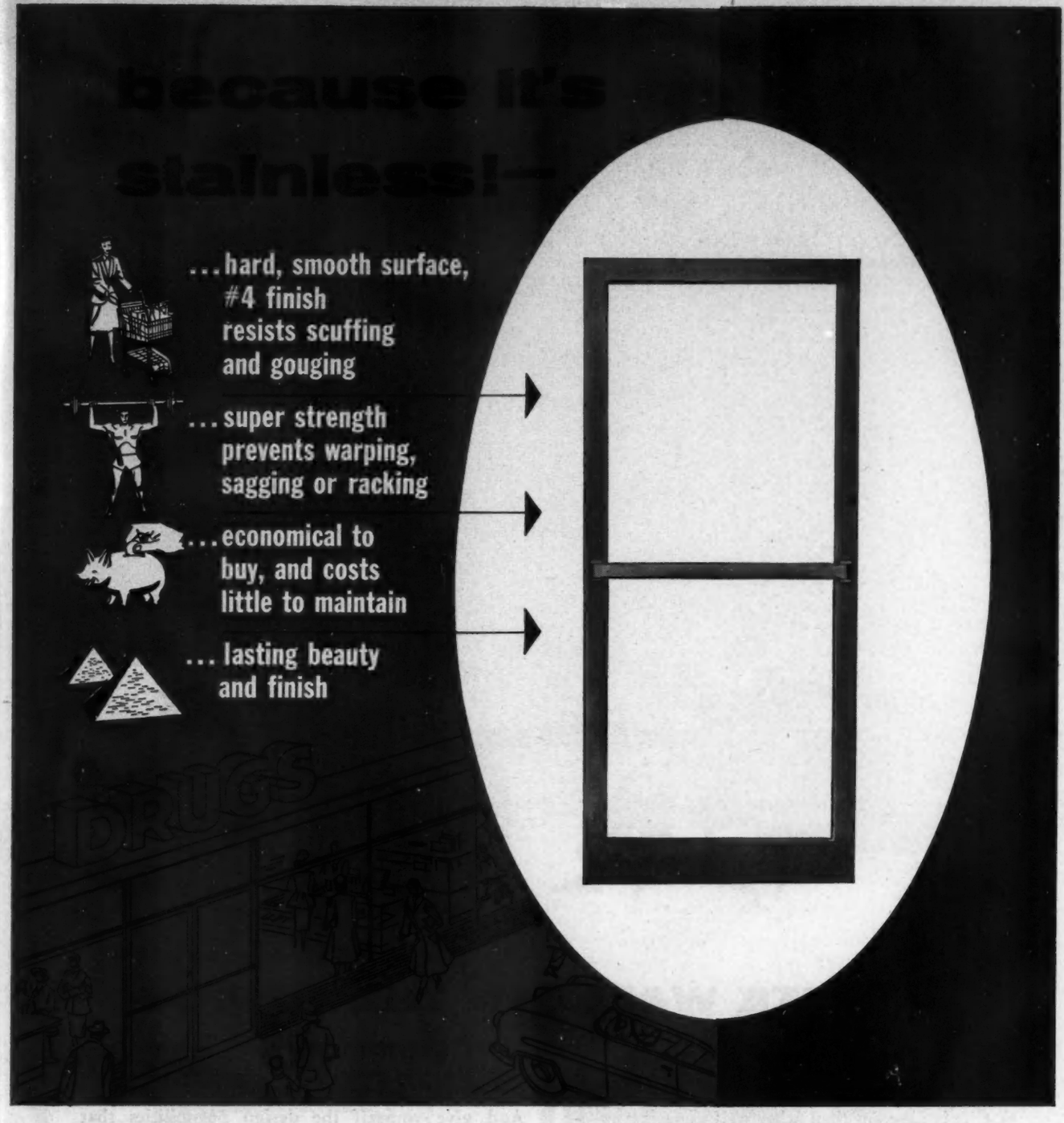
WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRE GLASS


because it's stainless!—
...hard, smooth surface, #4 finish resists scuffing and gouging
...super strength prevents warping, sagging or racking
...economical to buy, and costs little to maintain
... lasting beauty and finish
DRUGS

Overline®

STAINLESS STEEL

entrance doors

Sturdily built of stainless steel, Overline Entrance Doors overcome many of the problems peculiar to store entrances where hard usage and heavy traffic are the daily rule. By switching to stainless, you get the four definite plus-values listed above. Yet the price you pay is comparable to that of other metals. Overline Entrance Doors are also made in cold rolled steel with baked enamel finish in all colors. Write us today for our Overline Hollow Metal Door Catalog.

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MARLITE WALLS IN THE OFFICE

practically take care of themselves

Marlite is different than other wall surfacing materials. It provides an *economical* and *distinctive* surface that stays that way for years. Moreover, Marlite's plastic finish resists grease, heat, and stains. That means lower maintenance costs; elimination of periodic redecorating. Even repeated washings with soap and water won't affect Marlite's beauty.

In your next new construction or remodeling design, give your client the advantages of Marlite. And give yourself the design possibilities that Marlite Planks, Blocks, and large Panels afford. For both commercial and residential applications, Marlite's wood and marble patterns, in addition to "Companion Colors" styled by Raymond Loewy Associates, make possible an unlimited range of imaginative interiors. For full details consult your building materials dealer, refer to Sweet's File, or write Marsh Wall Products, Inc., Dept. 805, Dover, Ohio.

that's the beauty of **Marlite®**

PLASTIC-FINISHED WALL AND CEILING PANELING

Made With Genuine Masonite® Tempered Duolux®

100% Electrical Flexibility at LOW COST with R/C DUCT FLOORS

(ELECTRIFIED CONCRETE JOIST FLOORS)
No expensive fill or topping needed
Standard electrical distribution ducts are buried in structural concrete

R/C Duct Floors provide a complete network of underfloor electrical ducts for power and communication systems. Outlets can be connected to convenient risers in a matter of minutes without ripping up or drilling through floors and ducts.

R/C Duct Floors, which meet code requirements, consist of *standard* steel electrical distribution ducts set in reinforced concrete joist floors. Average costs show that R/C Duct Floors cost 19% less than cellular steel floors! Before you design your next building, investigate R/C Duct Floors.

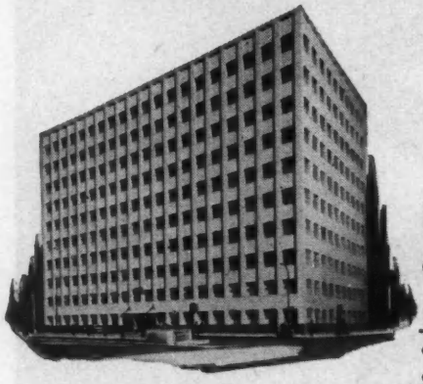
WRITE FOR NEW 16-PAGE BULLETIN

CONCRETE REINFORCING STEEL INSTITUTE

38 South Dearborn Street • Chicago 3, Illinois

Sinclair Oil's New Chicago Headquarters —Completely Sound Conditioned with Acousti-Celotex Tile

Sinclair Oil Building, 155 North Wacker Drive, Chicago
Owner: John W. Galbreath & Co., Inc.
Architect: Holabird & Root & Burgee
Builder: Turner Construction Company
Acoustical Contractor: James L. Lyon Co.



Lighting and air conditioning also included in integrated* system

John W. Galbreath & Co., Inc. has gone all-out for employee efficiency and comfort in this outstanding new Chicago office building. Throughout the 200,000 square feet of the building, Acousti-Celotex Mineral Tile traps machine clatter and voice chatter, reduces routine noise in general and private offices and corridors. For the Sinclair Oil Company and other tenants, this means that errors will be reduced, over-time lessened, productivity increased.

Low in Cost — Easily Maintained — Acousti-Celotex Tile provides economical sound-conditioning. No special maintenance is required. Beauty and cleanliness add to the advantages of highly effective sound-absorption. Acousti-Celotex Tile can be washed *repeatedly*, painted *repeatedly* without loss of sound absorbing efficiency.

*Acousti-Celotex incombustible Perforated Mineral Tile is installed on the Celotex Acousti-Line® Metal Suspension Ceiling, where Tile, light fixtures and air diffusers become interchangeable parts of the ceiling. When a new layout is desired, units can be quickly relocated . . . economically!

TRADE MARK

ACOUSTI-CELOTEX

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Sound Conditioning

Products for Every Sound Conditioning Problem

FOR FULL DETAILS on the complete line of Acousti-Celotex products, please write to The Celotex Corporation, Dept. B-85 120 S. La Salle Street, Chicago 3, Illinois.

THE CELOTEX CORPORATION, 120 S. LA SALLE ST., CHICAGO 3, ILLINOIS. IN CANADA: DOMINION SOUND EQUIPMENTS, LTD., MONTREAL, QUEBEC

Only *WATER* can give a home all these

COMFORT AND CONVENIENCE FEATURES!

With modern baseboard or radiant panels, every inch of the house is kept in warm, draft-free comfort.

In a water cooled home, correct compensation can be made for summer heat gain.

B & G BOOSTER
This noiseless electric pump is used to circulate water for heating the house, cooling it in summer and for snow melting panels. The B & G Booster is known everywhere for its quiet, dependable and long-lived operation.

The B & G *Hydro-Flo* System provides a year 'round supply of hot water for kitchen, laundry and bath. Plenty for automatic clothes and dish washers.

Snow melting coils can be installed under drives and sidewalks and circulated with hot water from a B & G *Hydro-Flo* System.

*Hydro-Flo** Systems

*Reg. U. S. Pat. Off.

This is today's most versatile provider of year 'round comfort and convenience! All the benefits of a B & G *Hydro-Flo* System can be enjoyed at once or added as the owner's budget permits.

Starting with the basic *Hydro-Flo* Forced Hot Water Heating System, you give your homes *radiant*, sunny warmth . . . draftless rooms . . . warm floors. Automatic modulation keeps indoor temperature uniform—no wasteful over-heating. In addition—a limitless supply of domestic hot water, heated by the same boiler that heats the house.

Next, *Hydro-Flo* snow melting equipment can be added, to keep drive and sidewalks free of snow and ice. And now or later, summer cooling can be provided in a choice of several ways.

Get the complete story—send for free booklet.

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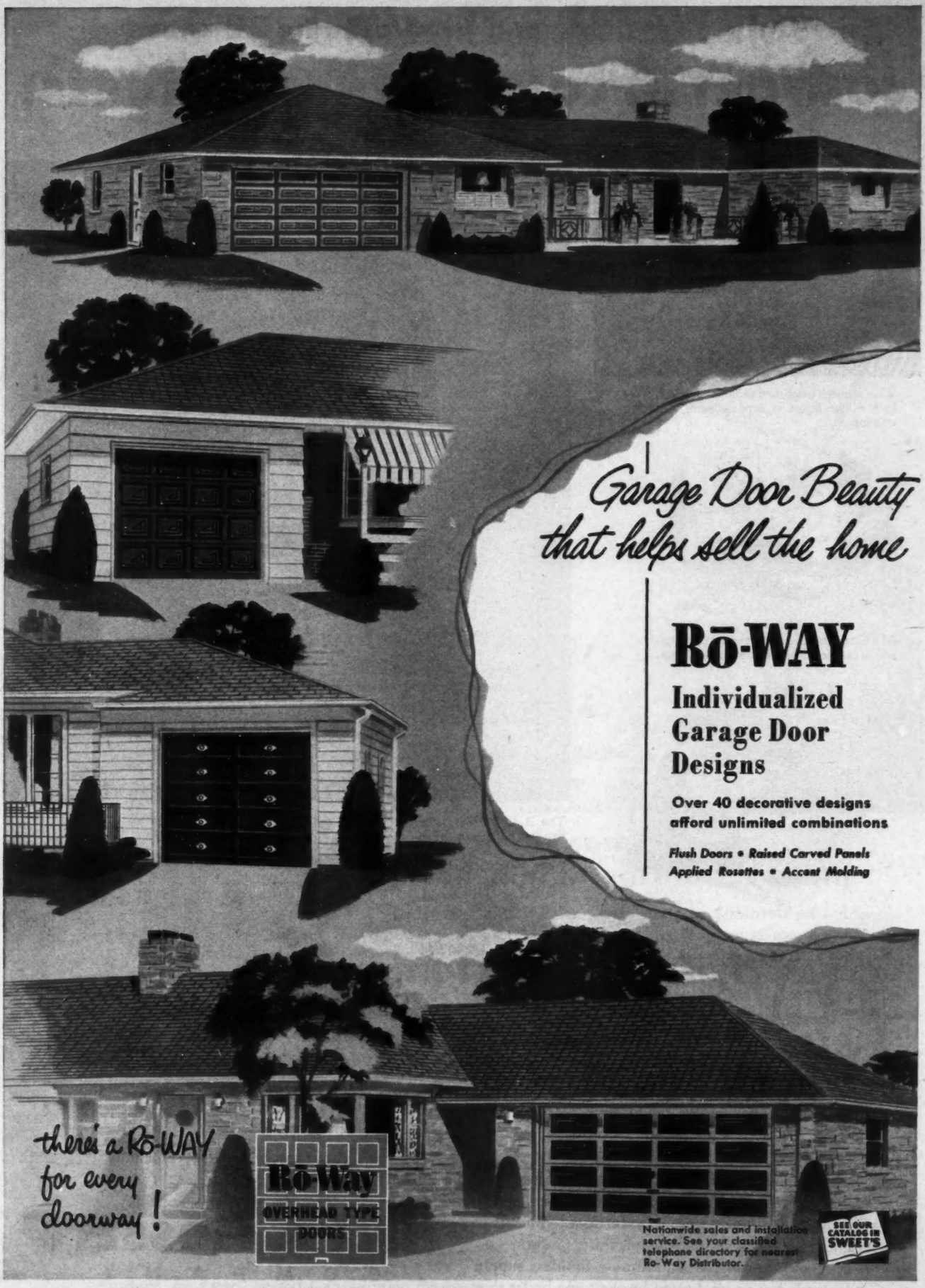


ROWE MANUFACTURING COMPANY 1259 HOLTON STREET • GALESBURG, ILLINOIS

LAKEWOOD HIGH SCHOOL
LAKEWOOD, OHIO
Hays and Ruth—*Architects*
Viktor Schreckengost—*Sculptor*
R. S. Ursprung Co.—*Builder*
Polychrome Architectural Terra Cotta was specified for this colorful 18' giant.

Gargantuan "Early Settler" created in Architectural Terra Cotta

Today more than ever before, color is architecturally important. Because of its unrivalled versatility, Architectural Terra Cotta enables you to use colors skillfully for sculpture or plain surfaces, interiors as well as exteriors. It is custom-made in an unlimited range of brilliant colors or delicate tints, in individual units large or small. You can use polychrome features without restriction... and specify any desired texture. No other building material offers so much—in design freedom, quality, appearance, permanence and price. Minimum maintenance is another advantage of Architectural Terra Cotta. Its original richness is retained indefinitely by simple soap-and-water washings.

Construction detail, data, color samples, estimates, advice on preliminary sketches, will be furnished promptly without charge on Architectural Terra Cotta and Ceramic Veneer. Write Dept. PA.

FEDERAL SEABOARD TERRA COTTA CORPORATION

10 East 40th Street, New York 16, N. Y.
PLANT AT PERTH AMBOY, NEW JERSEY

F S T C

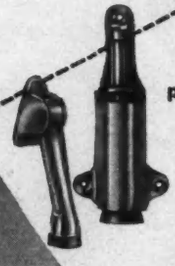
with a complete line of GJ devices to select from . . .

OVERHEAD DOOR HOLDERS and shock absorbers concealed and surface mounted. Many styles for exterior and interior doors.

You can specify *EXACTLY*

- according to each individual door control problem

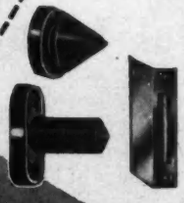
floor and wall type DOOR HOLDERS and BUMPERS in many desirable designs.



lever and plunger type DOOR HOLDERS

DOOR BUMPERS for varied uses.

DOOR MUTES and SILENCERS



INVISIBLE LATCHES

CABINET and DOOR CATCHES

ARM PULLS

According to the specific door holding, door stopping, shock absorbing, and door-noise elimination problem . . . according to the use, size, material and style of the door and door opening . . . according to the type of the building . . . yes, even according to the hardware budget . . . you can specify a GJ device that will meet most any door control problem.

Your recommendation is backed by a 30 YEAR GJ REPUTATION for quality hardware, precisely made from the finest materials

refer to catalog no. 54 for full description and details.

GLYNN • JOHNSON CORPORATION
4422 north ravenswood ave. • chicago 40, illinois

BORN THE YEAR THIS SILVER DOLLAR WAS MINTED

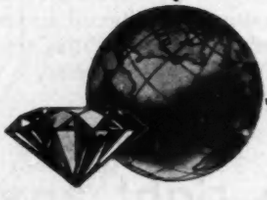
In 1880, the Globe-Van Doorn Corporation had its humble beginning as the Globe-Wire and Iron Works, a manufacturer of wire and iron fences, office partitions, bank grilles and other ornamental metal work which included the manufacture of passenger elevators.

In 1934 they purchased the assets of another well recognized manufacturer — the Van Doorn Company of Quincy, Illinois, who specialized in the manufacture of passenger elevator cars.

Because of the excellent reputation in the industry of both firms, it was decided to combine their names as well as their activities, and the two became the Globe-Van Doorn Corporation.

As the need for vertical transportation increased, Globe-Van Doorn found a mounting approval of its passenger elevator cars and has since specialized in the design and manufacture of such cars in metals and selected woods.

Today, 75 years later, Globe-Van Doorn is still a leader in its field and universally known by leading elevator companies and architects for expert craftsmanship and individual styling in elevator car design.



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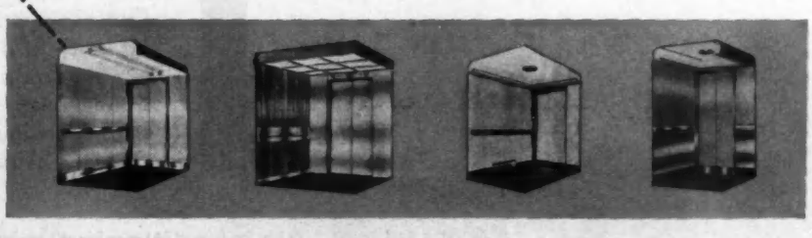


CUSTOM FABRICATORS OF ELEVATOR CARS SINCE 1880

Saks Fifth Avenue in San Francisco has an atmosphere all its own. So does every department in the store. Four Carrier Zoning Weathermakers* meet the variations in heat load, keep comfort constant from foyer to fitting rooms.

Edward Malley Company in New Haven, Conn., cools four floors and a basement with 27 self-contained Carrier Weathermakers*. Units are located in storage spaces off the selling floor, require only a small amount of ductwork.

Kline's West, Carrier-equipped department store in St. Louis, has a unique air duct system. Conditioned air comes from "trees"—ceiling-suspended, tree-like lighting troughs centrally located over main floor and mezzanine.

Carrier is the quickest way to the right answer

JUST 1–2 AND THE JOB IS THROUGH!

Carrier has all the ways to air condition any job—and all Carrier equipment is engineered to the same uniform standard. So short-cut hours of selection by (1) using the Carrier line as your shopping guide and then (2) comparing values. Get in touch with your Carrier dealer or distributor. He's listed in the Classified Telephone Directory. Or write to us directly. Carrier Corporation, Syracuse, New York. *Reg. U.S. Pat. Off.

Carrier air conditioning • refrigeration • industrial heating

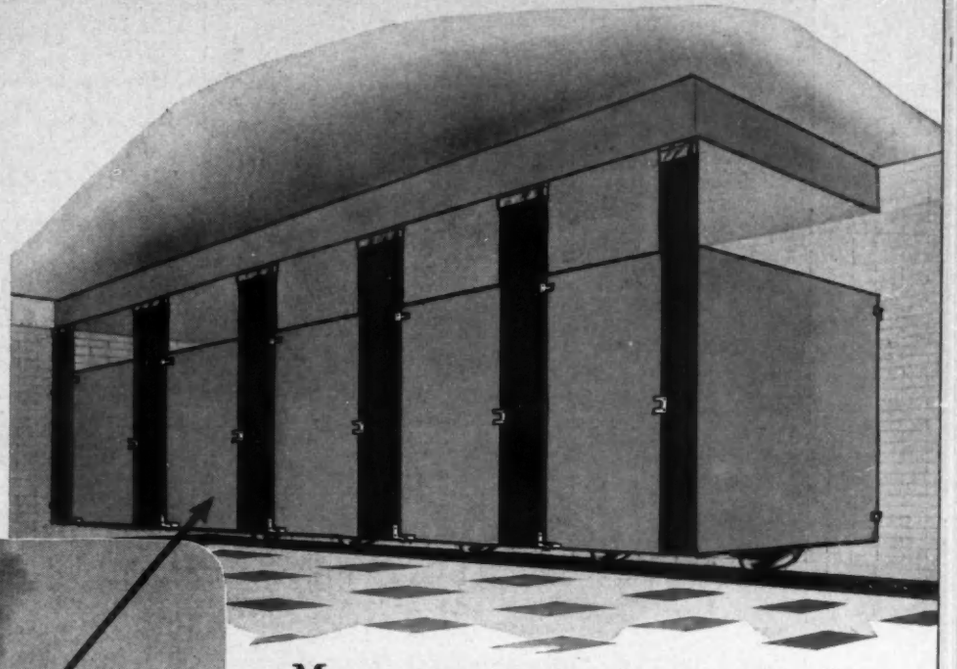
No. 3
OF A SERIES

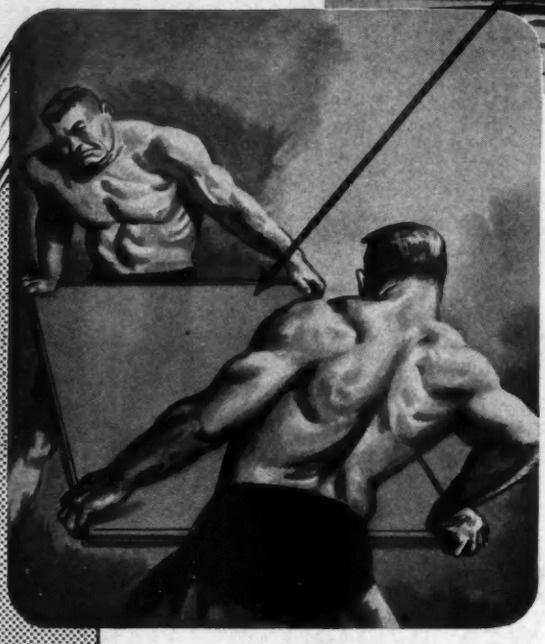
WHAT TO LOOK FOR IN QUALITY TOILET COMPARTMENT CONSTRUCTION

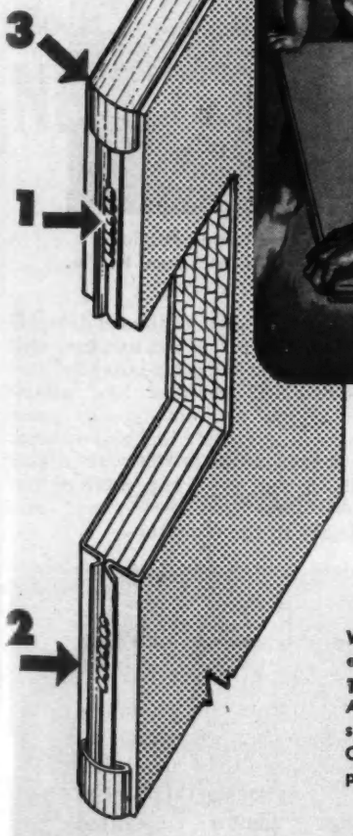
One of many major differences that give you your money's worth in satisfactory service!

Doors WELDED so rigid...

THAT WRESTLERS CAN'T SPRING THEM!







MAXIMUM RIGIDITY in Sanymetal doors is achieved by welding. Here is how two strong men attempted to spring the door. They were not able to give it a permanent set—when released any slight deflection disappeared and it was flat and aligned as it was designed.

WELDS AND LOCKING STRIPS account for the exceptional rigidity of Sanymetal doors. Arrows 1 and 2 point to welds which join door surfaces. At 3 you see the locking strips which exert spring action to hold surfaces tightly together. On Sanymetal Porcena doors these strips are polished stainless steel.

MANY quality construction features found in *all* Sanymetal Toilet Compartments mean longer satisfactory service. These features result from Sanymetal's 41 years' experience manufacturing compartments. Be sure you get this quality.

A feature you should notice is *rigidity* produced by *welding* at the edges to join the compartment door surfaces. This makes the door a rigid structural unit. The edges are then further reinforced and the door made stronger with a formed locking strip welded, ground and finished at the corners. Strong men cannot intentionally spring this door without use of heavy tools, an abuse more severe than extremely heavy service.

Welded, rigid doors are one of many special features you get at no extra cost on all Sanymetal Toilet Compartments. Ask your Sanymetal Representative about all these features available as standard from Sanymetal at no extra cost.

See Sweet's or send for Catalog 92, describing all Sanymetal Compartments. If you wish, we will mail other advertisements of this series on quality construction details.

This long-life feature is **STANDARD** *at no extra cost on all types of Sanymetal Compartments.*

THE Sanymetal®
PRODUCTS COMPANY, INC.
1689 URBANA ROAD, CLEVELAND 12, OHIO

Architects: Gregg and Briggs, Peoria;
General Contractor: Fred Harbers' Sons, Peoria.

RESIDENCE WING OF NEW YMCA HAS 7 STORIES OF OPEN-WEB JOISTS

This handsome new YMCA building in Peoria, Ill., is one of the most up-to-date in the country. Of modern design, with large areas of glass, the new "Y" contains lounges, club and game rooms, complete gymnasium and pool facilities, handball courts, special-purpose rooms and a comfortable chapel. All facilities are adequately separated as to age groups.

Restaurant, men's lounge and living quarters for young men are in the seven-story residence wing. Here the architects used Bethlehem Open-Web Steel Joists for floor and roof construction.

The advantages of using these open-web joists were many. The joists were delivered to the job site tagged and ready for placing with no delays to the construction schedule. They required only field welding to secure them in place, and to provide rigid, permanent construction. Pipe and conduits were run right through the open webs, and installation of recessed lighting fixtures was simplified.

In addition to these constructional advantages, the use of Bethlehem Open-Web Steel Joists gives added fire-safety to the entire structure.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM OPEN-WEB STEEL JOISTS

BETHLEHEM STEEL

FLORA EXPLAINS how the new G-E rapid-start ballast has a smaller brickette cross section while it still retains the same short length of the old brick ballast. There is no increase in heat rise and the new ballast has the same quiet sound rating of "B."

Flora shows you why . . .*

NEW G-E Ballast is 28% Smaller, 33% Lighter; Helps You Save Lighting Dollars

General Electric's ballast design leadership program has produced a new CBM-certified rapid-start ballast that is lighter, smaller, and costs less. G-E ballast engineers, through an ingenious redesign of the core and coil structure, have cut the weight down 33 percent and the cross section dimension by 28 percent. In addition, the new 40-watt rapid-start G-E ballast is easier to connect (it has an extra green lead); substantially reduced in price.

This is progress you can measure; progress that is the result of the intensive and continuing program of ballast design and development engineering. And these new developments will soon be applied to other G-E ballasts.

Next time you specify equipment for a fluorescent lighting installation make sure you get the best . . . specify General Electric ballasts. Look for the G-E ballast tag. For further information on G-E ballasts, write Section 401–17, General Electric Company, Schenectady 5, New York

*Miss Fluorescent Ballast, G.E.'s Ballast Mascot.

Copyright 1955, General Electric Company

G-E DEVELOPMENT engineer testing the new rapid-start ballast design that does the same ballasting job for less money.

Six reasons why

GENERAL ELECTRIC IS YOUR BEST BALLAST VALUE

- EXCLUSIVE SOUND RATING SYSTEM
- PROVED PRODUCT LEADERSHIP
- SUPERIOR QUALITY CONTROL
- LONGER BALLAST LIFE
- PRECISE LAMP-MATCHED DESIGN
- COMPLETE CUSTOMER SERVICES

Progress Is Our Most Important Product

GENERAL ELECTRIC

Ideal Indoor Weather for

new Houston Post building

Honeywell Electronic Control Panel operates 400-ton cooling plant automatically

New Honeywell control panel measures water temperature and flow, then selects proper cooling unit

A NEW method of regulating indoor weather is in use in the Houston (Texas) *Post's* modern publishing plant. It features a special control panel that governs the plant's 400-ton cooling system.

This special panel, a Honeywell Color-Graphic, automatically stops and starts the building's 150 and 250-ton centrifugal compressors. And it automatically operates the 150-ton, 250-ton unit, or both — depending on cooling needs. This assures the greatest economy of operation. Picture captions explain its functions in detail.

Throughout the building, from press room to executive offices, comfort levels are maintained summer and winter by strategically placed electronic thermostats. They're readily adjustable on the spot to meet the rapidly shifting comfort needs of a daily newspaper's large staff.

Automatic changeover from heating to cooling helps achieve both efficiency and economy.

These features and others described here demonstrate how electronics can bring modern atmosphere control to any building: you easily gain ideal indoor comfort through ideal control of temperatures and air circulation.

The techniques used to solve comfort problems of the Houston *Post* can help you provide better working weather for your clients. For a Honeywell Electronic Customized Temperature Control installation is designed to fit the needs of the building and its occupants.

For comfortable, more productive temperatures in new or existing buildings—of any size—specify Honeywell Electronic Customized Temperature Control

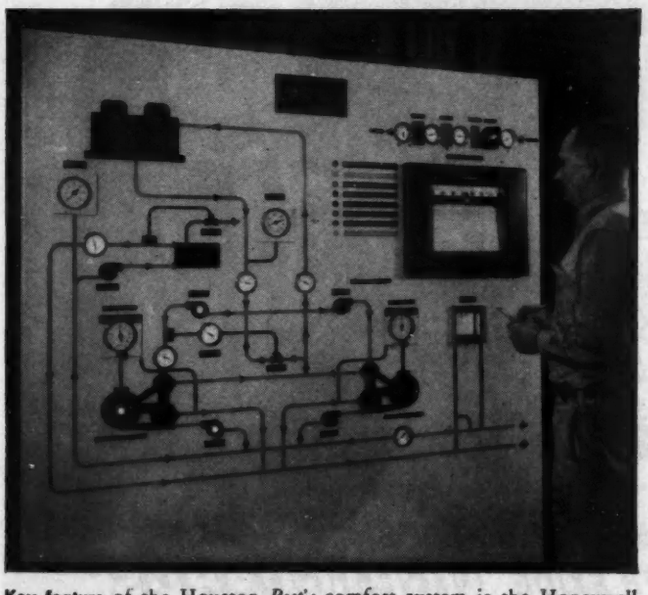
Whether it's a plant, bank, office, church, school, motel, hospital—any building of any size, new or existing—flexible Honeywell Electronic Customized Temperature Control can help meet your clients' heating, ventilating, air conditioning and industrial control requirements.

For all the facts on Honeywell Electronic Customized Temperature Control, and the economical Honeywell Periodic Maintenance Plan, call your Honeywell office. Or write Honeywell, Dept. AR-8-124, Minneapolis 8, Minn.

Herbert Voelcker & Associates, architects. Charles V. Chenault, consulting engineer. E. Lee Bond General Contractor. Wood-Leppard Air Conditioning Company, mechanical contractors.

Air conditioned pressroom is an unusual feature of the Houston *Post* building. Despite heat generated by the huge presses, Honeywell controls maintain comfortable working temperatures, can be adjusted on the spot to meet varying comfort needs.

Large open areas, like the Houston *Post* composing room, are held at maximum comfort throughout. Inexpensive, simply constructed electronic thermostats are placed at strategic locations in the building.



Key feature of the Houston *Post's* comfort system is the Honeywell Color-Graphic electronic control panel. Carefully customized to the building's special needs, the panel operates two centrifugal compressors, two chilled water pumps and two condenser water pumps. With electronic accuracy, it *automatically* guides these units through the operational cycle, going from minimum to maximum cooling capacity of 400 tons.The panel also determines cooling load requirements by an ingenious method; measuring temperature differential of supply and return water, and gallons per minute being delivered to the system. Completely automatic operation frees a full time engineer for other duties. Normally a cooling plant of this size requires his full attention.

Advantages of an Electronic Control System

An Electronic control system is the most *flexible* control system you can use. It lets you:

operate your thermostats *as* you want to

sequence from your thermostats *when* you want to

locate your thermostats *where* you want to

compensate your thermostats *as much as* you want to

W. Howard Baldwin, Houston *Post* vice-president and general manager, says: "Our new four-million-dollar plant was built with an eye to the future. Electronic temperature control, plus control centralization with a Color-Graphic panel by Honeywell, were selected to ensure a modern control system for the many years to come."

MINNEAPOLIS
Honeywell

Electronic Controls

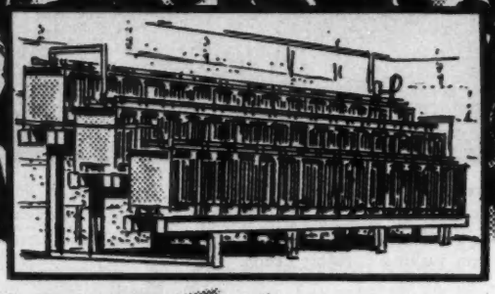
112 offices across the nation

FACTS ABOUT Exide®

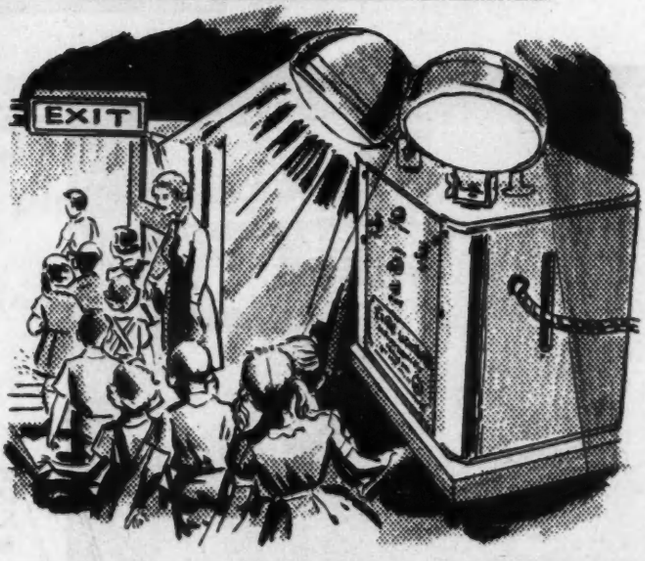
EMERGENCY LIGHTING SYSTEMS

WRITE IN EXIDE EMERGENCY LIGHTING PROTECTION AND WRITE OUT DANGERS OF "SUDDEN DARKNESS"

SUDDEN DARKNESS CAN QUICKLY RESULT IN INJURIES, PROPERTY DAMAGE, EVEN PANIC. THAT'S WHY ARCHITECTS FOR THE PENN VALLEY ELEMENTARY SCHOOL, LOWER MERION SCHOOL DISTRICT, ARDMORE, PA., WROTE EXIDE EMERGENCY LIGHTING PROTECTION INTO THEIR SPECIFICATIONS. NOW, IF NORMAL POWER IS INTERRUPTED, A BANK OF DEPENDABLE EXIDE BATTERIES FURNISHES POWER INSTANTLY AND AUTOMATICALLY FOR LIGHTS OF THE AUDITORIUM, GYMNASIUM, HALLS AND EXITS. REMEMBER, BY SPECIFYING EXIDE EMERGENCY LIGHTING FOR ANY BUILDING OF PUBLIC ASSEMBLY YOU WRITE OUT THE DANGERS OF SUDDEN DARKNESS.



SPOT CHECK OF FLOOR PLANS FOR VITAL EXIDE EMERGENCY LIGHTING LOCATIONS!



LONG-LIFE EXIDE BATTERIES

HAVE BEEN USED FOR YEARS TO SUPPLY LOW-COST POWER FOR ALL TYPES OF EMERGENCY LIGHTING SYSTEMS, FOR 6-VOLT, 32-VOLT AND 115-VOLT INSTALLATIONS. FOR HELP IN DETERMINING WHAT TYPE OF SYSTEM TO INSTALL AND SPECIFICATIONS:

1. CALL AN EXIDE SALES ENGINEER FOR FULL DETAILS.
2. WRITE FOR FORM 4808 DESCRIBING LIGHTGUARDS.

LOW-COST EMERGENCY LIGHTING WITH EXIDE LIGHTGUARDS®

THESE UNITS ARE THE FIRST TO BE UL APPROVED AS EMERGENCY LIGHTING UNIT-EQUIPMENT. THEY ARE DESIGNED FOR PERMANENT INSTALLATION. OTHER TYPES, UL-APPROVED FOR AUXILIARY LIGHTING, PLUG INTO ANY 115-VOLT 60-CYCLE OUTLET, ELIMINATING EXTENSIVE REWIRING. USE THEM TO SUPPLEMENT AN EXISTING (PERHAPS INADEQUATE) SYSTEM--OR TO START NEW ONES.

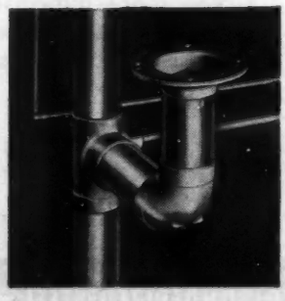
Exide INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.

You wouldn't specify old fashioned fixtures...

why specify old fashioned caulked or threaded plumbing?

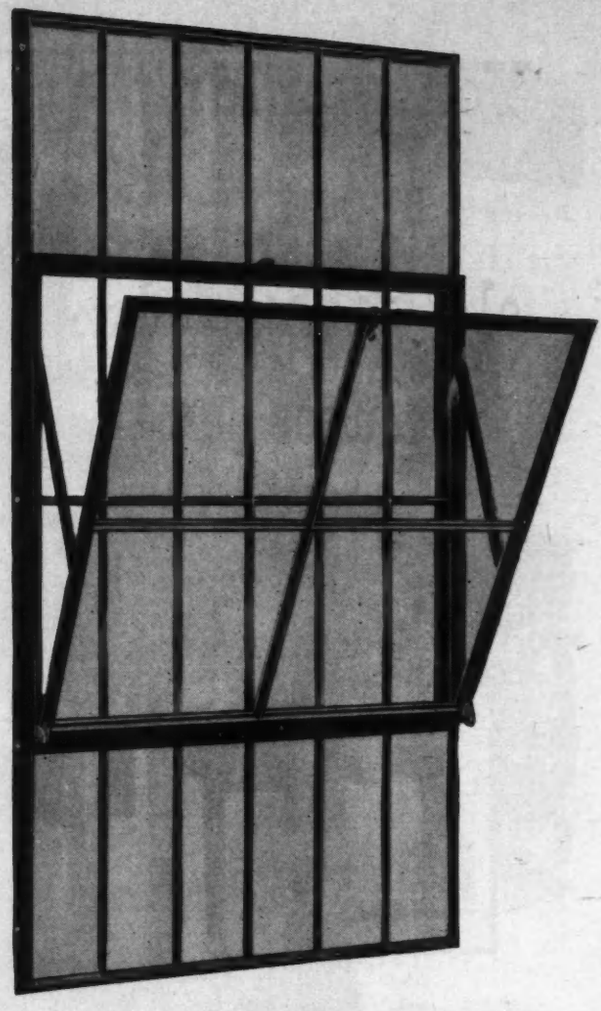
Use *Streamline*® copper tube and fittings for a modern drainage system

By specifying Streamline copper tube and fittings for drainage plumbing, you give the home-owner an up-to-date, free-flowing, corrosion resistant drainage system that will last for the life of the building. There are no caulked joints to leak, no rust damage to worry about, no client complaints to answer. The compact 3" stack fits into a standard 2" x 4" partition . . . increasing usable house space and eliminating the need for furring. The smooth attractive appearance of Streamline copper tube and fittings adds visual sales appeal to every modern installation. Your client depends on you for the trouble-free future of his home . . . you can depend on Streamline for a lifetime of trouble-free service.



MUELLER BRASS CO. STREAMLINE PRODUCTS

MUELLER BRASS CO. PORT HURON 5, MICHIGAN



Here's a window that keeps a prowler honest!

He doesn't have much choice. For Fenestra* Security Windows provide two-way protection, from outside and inside, against entrance and against passage of material out through unprotected windows.

There are other advantages, too. Fenestra metal screens are easily attached to the inside, between ventilator and grille, safe from removal. Ventilators open in from the top, deflecting drafts, shedding rain. The building gets fresh-air ventilation 24 hours a day without exposing the interior to public view when obscure glass is used. Open-in ventilators do not protrude beyond the building line to endanger pedestrians; cars or trucks cannot damage the windows.

And Fenestra Security Windows are good looking. No separate bars outside the window. The window and grille are *one unit.* They are also easy to install—one contractor installs one complete unit in only one operation. They're ideal for stores, warehouses, garages, small plants and many other buildings, in first-floor walls, unprotected side and rear elevations, and near fire escapes or roofs of adjoining buildings.

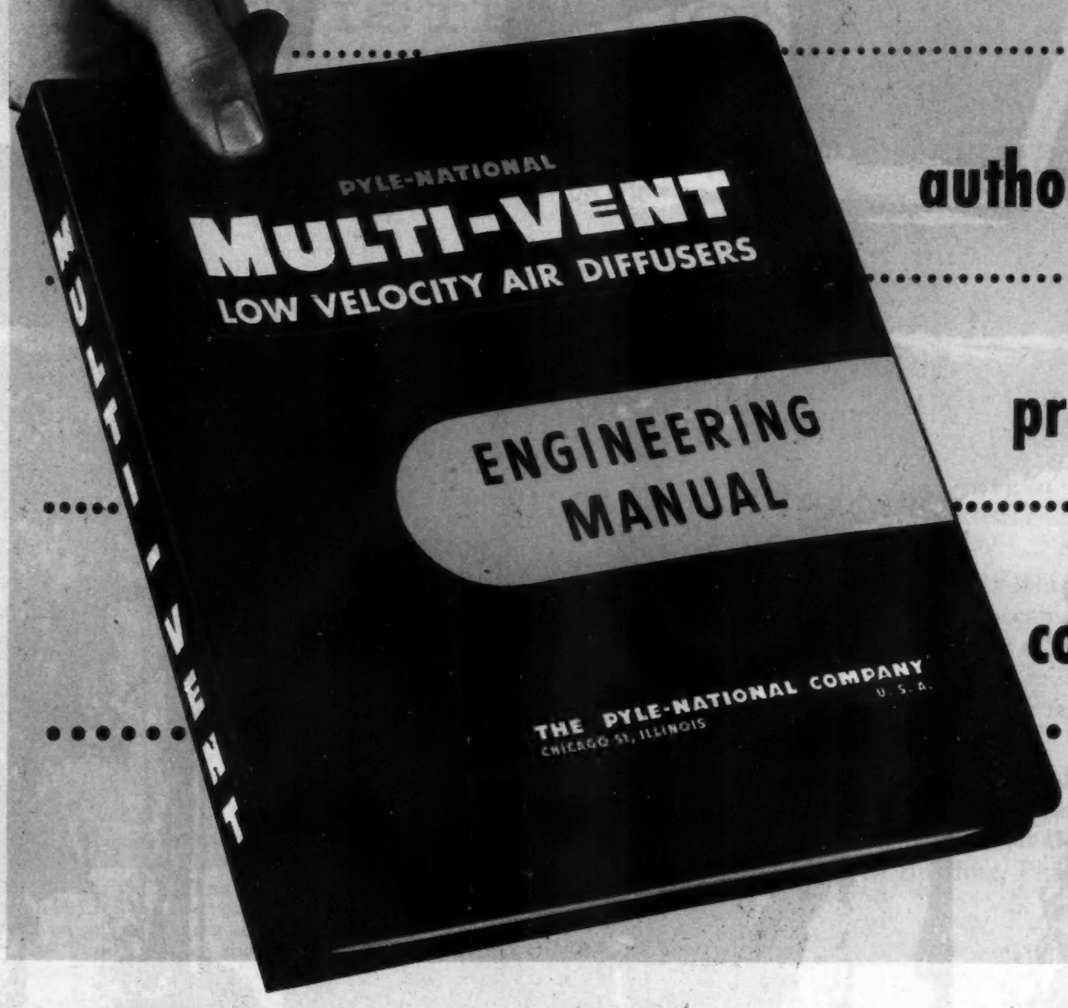
For more information, call the Fenestra representative listed in classified directories of principal cities. Or write the Detroit Steel Products Co., Dept. AR-8, 2252 East Grand Boulevard, Detroit 11, Michigan. *®

Fenestra GBS **SECURITY WINDOWS**

GALVANIZED-BONDERIZED-STEEL — THE STRONGEST MATERIAL, CORROSION-PROOFED FOR LIFE!

ARCHITECTURAL, RESIDENTIAL AND INDUSTRIAL WINDOWS • METAL BUILDING PANELS • ELECTRIFLOOR* • ROOF DECK • HOLLOW METAL SWING AND SLIDE DOORS

a copy should be in YOUR hands . . .

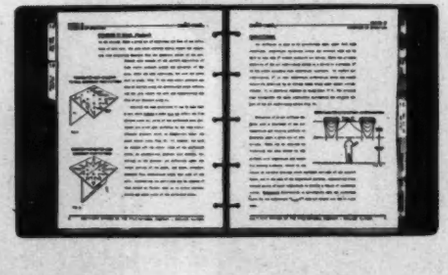


it's **authoritative!**

it's **practical!**

it's **complete!**

it's **new!**



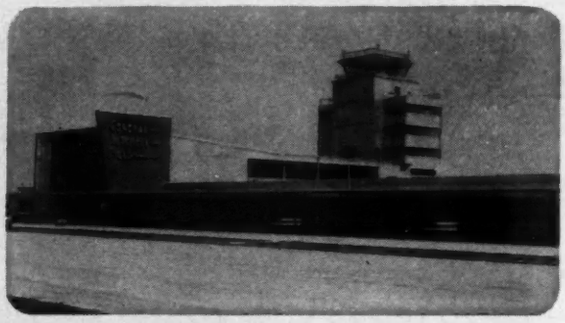
Handily indexed, here's a highly informative 71-page manual on low-velocity air distribution for heating, cooling and ventilating— from basic principles to detailed installation data for all types of ceilings.
An invaluable reference, yours for the asking . . . on your company stationery, please.

multi-vent division of THE PYLE-NATIONAL COMPANY
WHERE QUALITY IS TRADITIONAL
1375 N. Kostner Avenue, Chicago 51, Illinois

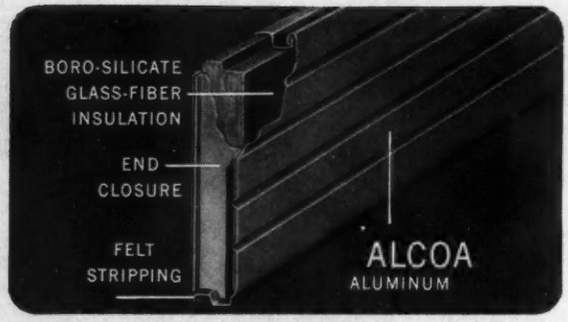
SALES AND ENGINEERING REPRESENTATIVES IN PRINCIPAL CITIES OF UNITED STATES AND CANADA

Detroit Steel Products' Fenestra Panels give Milwaukee

LIGHTWEIGHT, EXPANDABLE, LOW COST AIRLINES ADMINISTRATION BUILDING



General Mitchell Field Airport Terminal, Milwaukee, Wis. *Architect:* Milwaukee County Architects' Office; *Contractor:* Milwaukee County Construction Dept.



A leader in building products for fifty years, Detroit Steel Products Company has been an important factor in supplying a complete line of building panels like the Type C Panel shown and other products for the construction industry.

Eighty thousand pounds of Alcoa Aluminum was used in the seventy-five thousand square feet of Fenestra Panels completely shop-fabricated for the Airport Terminal. Detroit Steel Products Company's Pittsburgh plant is enclosed with similar panels.

Subsoil tests at General Mitchell Field, Milwaukee, Wis., ruled out conventional construction of a new administration building. Study of various lightweight building materials led to the adoption of Fenestra Insulated Aluminum Panels.

Manufactured of Alcoa® Aluminum, these panels have insulation value equal to sixteen inches of brick. Ease and speed of erection permitted early "closing-in" for the protection of workers and materials and uninterrupted work sequences.

The Fenestra Panels also permitted easy expansion as the need became apparent during construction. Total cost of facilities for eleven major airlines was three million dollars, about one-third that of similar facilities if built of conventional materials.

For full information on aluminum building materials, call your local Alcoa sales office. Or write: ALUMINUM COMPANY OF AMERICA, 1888-H Alcoa Building, Pittsburgh 19, Pa.

Your Guide to Aluminum Value

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

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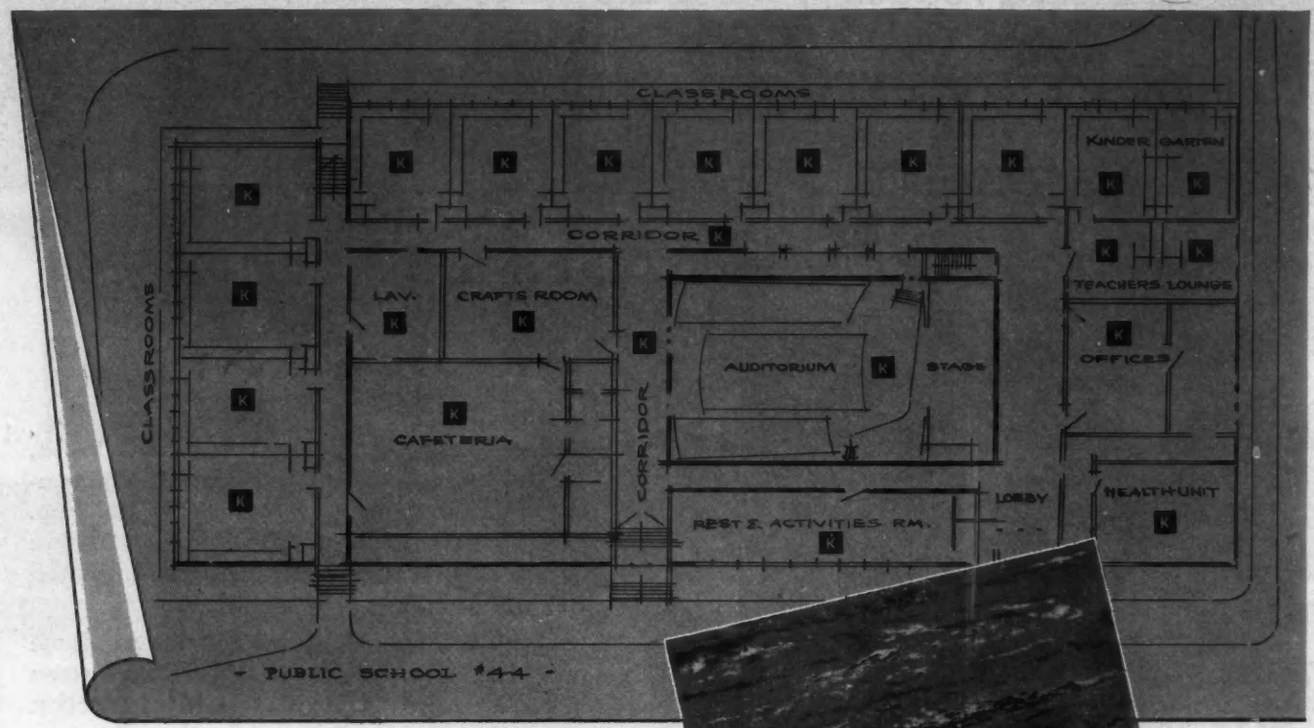
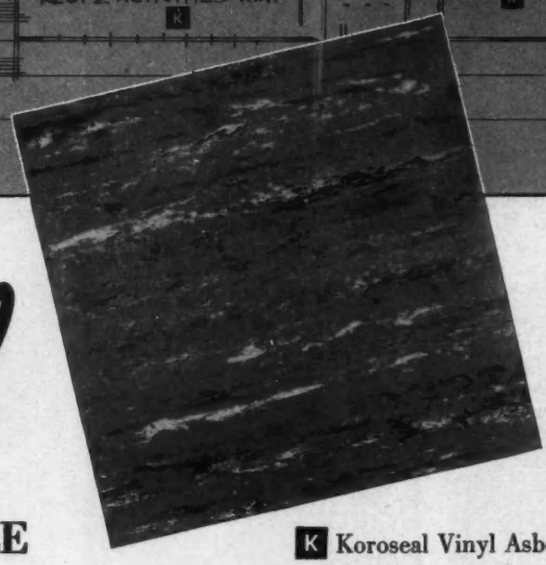
Build *satisfaction* into your school floor plans!



B.F.Goodrich Koroseal FLOOR TILE



K Koroseal Vinyl Asbestos Tile

Basically, the client looks to the architect to deliver only one thing — *satisfaction*. In floors, that means serviceability, good appearance and low maintenance. This explains why more and more architects are specifying B. F. Goodrich Koroseal Floor Tile for school installations. They know that B. F. Goodrich Koroseal Floor Tile *alone* offers these important features:

"BUILT-IN LUSTRE" — NEEDS NO EXTRA SURFACE FINISHES — Minimum care — stays bright with just an occasional washing and light buffing.

DEFIES DESTRUCTION — Super-resistant to oils, fats, greases . . . even cleaning fluids and alkalies.

ANTI-SLIP SURFACE — Safe to walk on, always.

MAXIMUM WEAR — Same material from top to bottom — no coating, no lamination.

Available in ⅛" and 80 gage thicknesses and in 18 colors.

For B. F. Goodrich aids for architects, *write to Department AF7, B. F. Goodrich Co., Flooring Division, Watertown 72, Massachusetts.*

B.F.Goodrich FLOORING PRODUCTS

RUBBER TILE · ASPHALT TILE · KOROSEAL TILE · RUBBER COVE BASE · ACCESSORIES

more "street level" sales areas

Continuously moving Otis Escalators act as attractive invitations to travel UP and DOWN to all floors without effort, waiting or crowding. ***They make all sales areas as accessible as the coveted street level locations.*** As a result all sales areas, on all floors, do a better selling job — because merchandise that can be seen can be sold!

Otis Escalators are really inclined sales aisles. Their safe riding speed permits shoppers to retain that enthusiastic attitude so important to impulse buying. Shoppers locate sales items faster; see bargains they might otherwise have missed; make more impulse purchases — because they are continuously exposed to a panoramic view of dramatically displayed merchandise on all floors!

surprise for the "forgotten man".

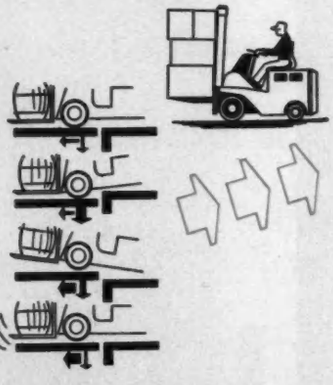
Otis AUTOTRONIC® elevators handle the 5 o'clock ***let's-go-home*** rush with an electronically versatile Down-Peak program—which pays especial attention to the once "forgotten man."

If a waiting DOWN passenger is left at a lower floor a minute or more, because of extraordinarily intensive DOWN traffic from the upper floors, the system responds by automatically stopping the next empty UP car at this passenger's floor and giving him individual DOWN service—***so that he, too, can catch his regular train home!***

improves elevator service by 25%

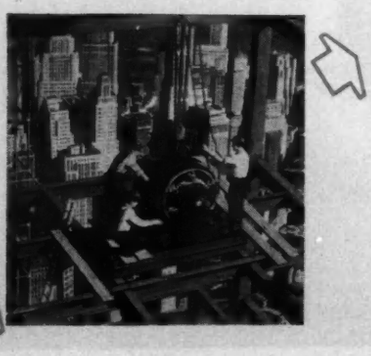
If you modernize an existing bank of car switch elevators to completely automatic AUTOTRONIC operatorless elevators this is what happens: The magic of electronic group supervision greatly reduces passenger waiting time. And automatic car operation reduces travel time. The result is 25% better service. In some instances this has actually reduced the number of elevators in the original group.

Further, completely automatic AUTOTRONIC elevators end all concern about elevator operators. Each car has an "automatic elevator operator" on duty every minute of the day and night. Every "operator" is fully trained, with instantaneous reflexes that never tire or slow down. And every "automatic" operator saves up to $7,000 a car, each year—***making the modernization self-liquidating!***



what are the extra stresses?

Freight elevators need extra ruggedness of design to stand up under industrial power truck loading "punishment". The arrows in the diagrams at the left show how impact stresses vary when the elevator platform is level, below or above the landing. They also show the effects of a fast braking stop. These and the stresses of off-balance loading, and extra static loading are at work, not singly, but simultaneously and in endless combinations —as described in detail in Otis Heavy Duty Freight Elevators booklet B-705.



delivering the promise

Otis construction skill delivers the promise that forms the basis of every Otis contract—***the world's finest elevatoring!*** Elevator construction skill calls for men with an unusual combination of skills — those of a rigger, iron worker, machinist, electrician, carpenter, and sheet metal worker ***plus*** long Otis training in studying elevator parts, assemblies, functions, construction procedures, final testing and adjusting.

OTIS ELEVATOR COMPANY, 260 11th Ave., New York 1, N.Y.

OFFICES AND SERVICE IN 295 CITIES ACROSS THE U. S. AND CANADA

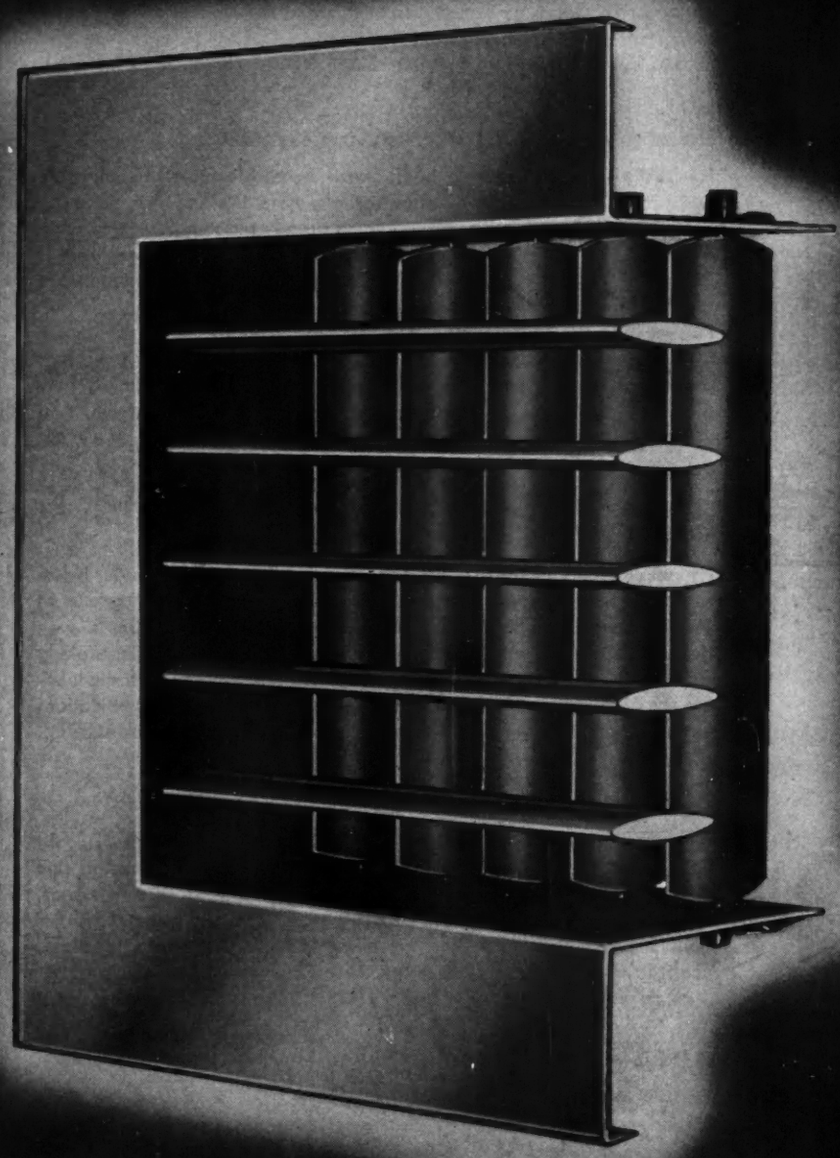
directional arrows

for ARCHITECTS

- PASSENGER ELEVATORS
- ESCALATORS
- FREIGHT ELEVATORS
- CARS AND ENTRANCES
- DUMBWAITERS
- MODERNIZATION
- MAINTENANCE

Otis

ROOM AIR DISTRIBUTION . . .



IS NOT COMPLICATED

50% OF GRILLE ENGINEERING & ADJUSTMENT PROBLEMS

NEW MORE AIR CONTROL BUILT-IN

By engineering MORE AIR CONTROL per square inch into each diffuser and grille . . . *right at the factory* . . . Titus simplifies all phases of grille *specification, selection, installation* and *adjustment.* Eliminates any necessity for special factory schooling or instruction at the contracting, engineering or tradesman level. Any workman can install a Titus grille without unbalancing the whole expensive system.

NEW MORE SIMPLE INSTALLATION

Install grille in 2 easy steps. (1) Fasten grille in place with screws. (2) Adjust louvers for correct air patterns. Titus *makes it easy, makes it simple* to obtain correct air patterns . . . patterns that give *maximum room comfort . . . from any air conditioning system.*

NEW MORE FLEXIBILITY OF ADJUSTMENT

Most important . . . any miscalculations that have crept in during the installation period may be simply and easily corrected by quick adjustment of streamlined Airfoil louvers. ADJUSTING IS DONE *WITHOUT* REMOVING GRILLES FROM WALLS. COSTLY TIME-CONSUMING "CALL BACKS" ARE ELIMINATED.

NEW SIMPLIFIED, FOOL PROOF DESIGN

All Titus grilles and diffusers are built under the most rigid, precision-controlled standards. They give finest air diffusing performance. Air control cannot be lost at the installation level. Titus grilles are so carefully constructed it is almost impossible to have anything but correct diffusion of air . . . no matter who installs or adjusts them.

SETS PERFORMANCE STANDARD FOR ENTIRE AIR CONDITIONING SYSTEM

Directs air where it is needed. Keeps uniform temperatures throughout room. Eliminates old-fashioned drafts . . . low level stratification. Truly controls comfort . . . *at the room level* . . . THE ONLY AREA WHERE THE UNIT'S ENTIRE HEATING OR COOLING PERFORMANCE IS JUDGED.

FREE CATALOGS

Get information on the complete line of Titus grilles now.
Order actual samples. Look at them. Hold them in your hands. Test them. See for yourself why Titus can save you money. Can give you better air diffusion performance . . . in every type of building where air conditioning is used.

TITUS MANUFACTURING CORP., WATERLOO, IOWA

Gentlemen: I wish to simplify my grille installation problems and to lower my grille installation costs. Please send me complete information on the following Titus grilles.

☐ Supply Grilles & Registers ☐ Return Air Grilles ☐ Volume Controllers
☐ Frames and Accessories ☐ Gymnasium Grilles

Name _____

Address _____

City _____ State _____

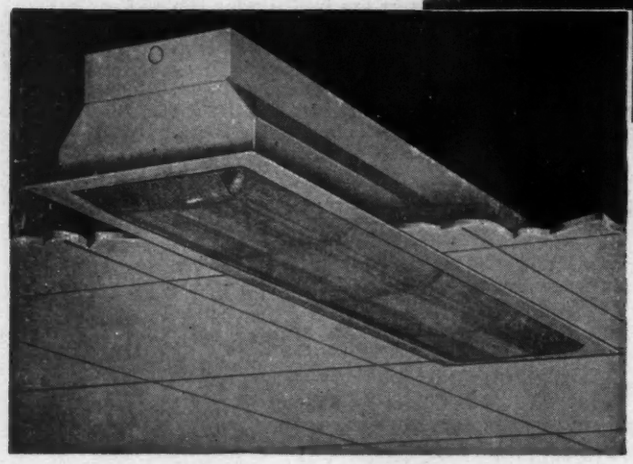
Specified because it provided the best lighting for the job!

Building:
Municipal Administration Airport Bldg., Cedar Rapids, Iowa.

Consulting Engineers:
Green Engineering Co., Cedar Rapids, Iowa.

Electrical Contractor:
Cedar Rapids Electric Supply Co., Cedar Rapids, Iowa.

Design No.:
FL-433 and FL-483 Recessed —2/40 watt



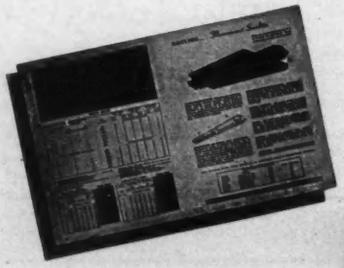
KAYLINE

the one source lighting line

IN an airport, where life, limb and property depend on the accuracy of detail, lighting performs an extremely vital service. It is significant that KAYLINE Fixtures — 274 of them — were specified to provide the lighting for this job . . . significant because it indicates the high standards for which KAYLINE is known.

These high standards didn't just happen. It takes a special kind of feeling for the importance of lighting . . . a special kind of care in assembling and testing . . . a special kind of responsibility for simple installation and easy maintenance — the extra special things that KAYLINE puts into lighting fixtures.

To architects who have an equal respect for the relation of lighting to living, KAYLINE has "something special" to offer — a sincere understanding of your problems and a keen desire to work with you. May we show you what we mean by sending you our catalog which not only shows our complete line of fluorescent, incandescent and slimline fixtures but also an abundance of helpful specification data?



THE KAYLINE COMPANY

Dept. AR, 2480 East 22nd Street • Cleveland 15, Ohio

Established 1895

EVEN OUR CATALOG IS DIFFERENT

The best cellars feature Chase® Copper Tube

You add *extra-value* to the whole home with hot and cold water lines of Chase copper tube. *More years* of trouble-free service, *more efficient* water flow with little or no increase in cost!

That's because Chase copper tube *resists* corrosion—can't clog with rust! Diameter for diameter, this copper tube passes *higher water volume* than lines of rustable metal! Its smoother inside surface cuts friction to a minimum, assuring fast and efficient discharge of fixtures.

Chase copper tube is easier to handle. Can be *quickly* cut to the required length with ordinary tools. Rugged, leakproof solder joints are made *without* time-consuming threading. Long lengths are available; require *fewer* joints.

Specify Chase copper water tube for hot and cold water lines. Add extra quality at little or no extra cost!

Chase copper drainage lines, too, give superior service over the years... add extra-value to any home!

Chase®

BRASS & COPPER CO.

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The Nation's Headquarters for Brass & Copper

Albany†	Chicago	Detroit	Los Angeles	New York	St. Louis
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Baltimore	Cleveland	Houston	Minneapolis	Pittsburgh	Seattle
Boston	Dallas	Indianapolis	Newark	Providence	Waterbury
Charlotte†	Denver	Kansas City, Mo.	New Orleans	Rochester†	(†sales office only)

QUICK INSTALLATION OF AMVIT JOINTED CLAY PIPE SOLVES SEWER PROBLEM FOR CAMDEN, N. J.

City Engineer
George Rogers

Assistant City Engineer
John Morgan

Contractor
C. & T. Affiliates, Inc.
John B. Kelly, President

New Amvit Jointed Clay Pipe saved considerable time and money for Camden, New Jersey.

The installation of this 15-inch sewer was done quickly and easily. The pipe was delivered ready for the ditch with the Amvit joint "built-in".

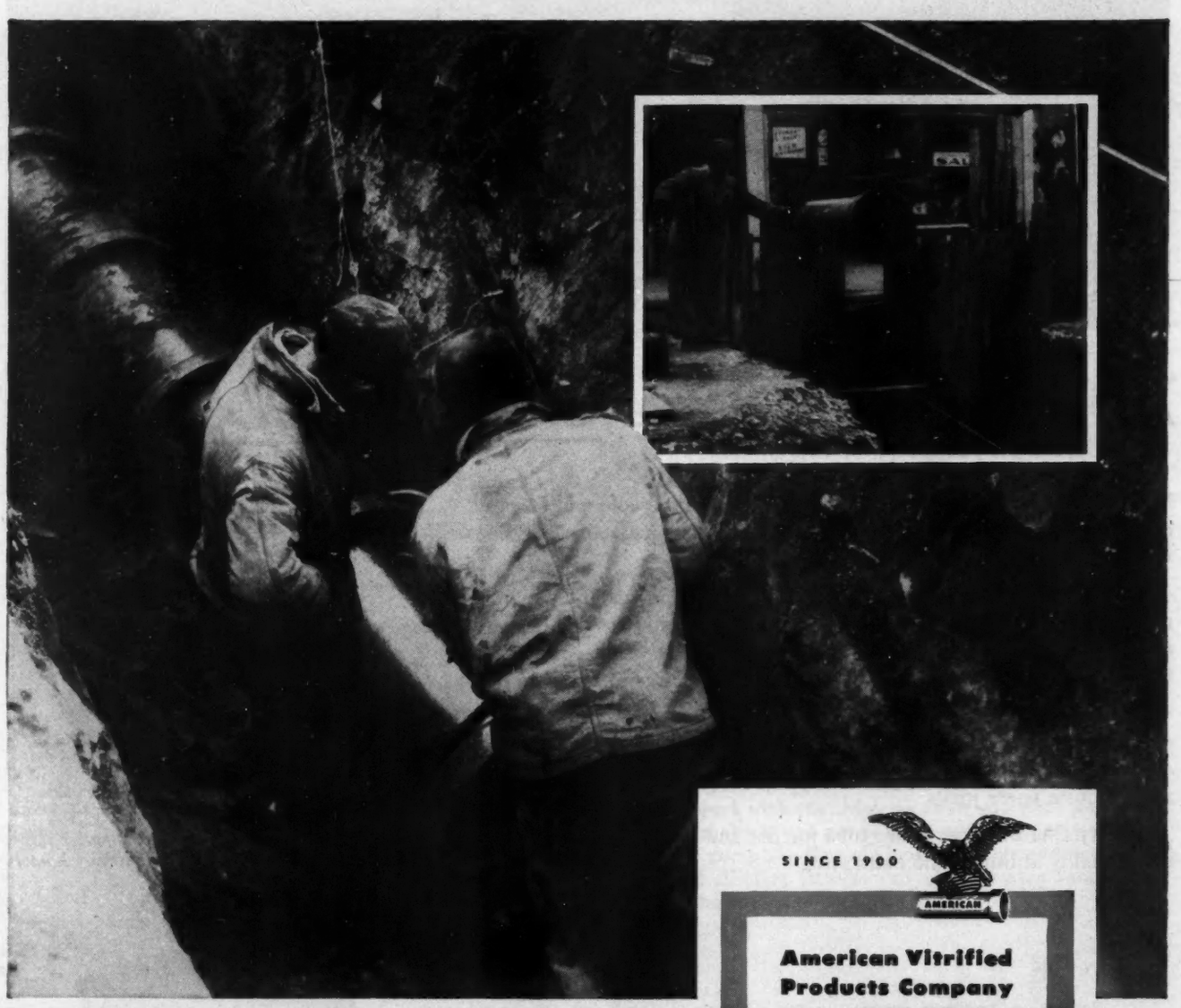
When the pipe is "pushed" together, the joint is in constant compression. Water cannot force its way in or out. Because this joint is flexible, immediate backfilling was possible.

Cut costs of *installed* pipe. Prevent costly infiltration. Stop pumping and treating thousands of gallons of ground water.

Specify easy-to-install, permanent Amvit Jointed Vitrified Clay Pipe.

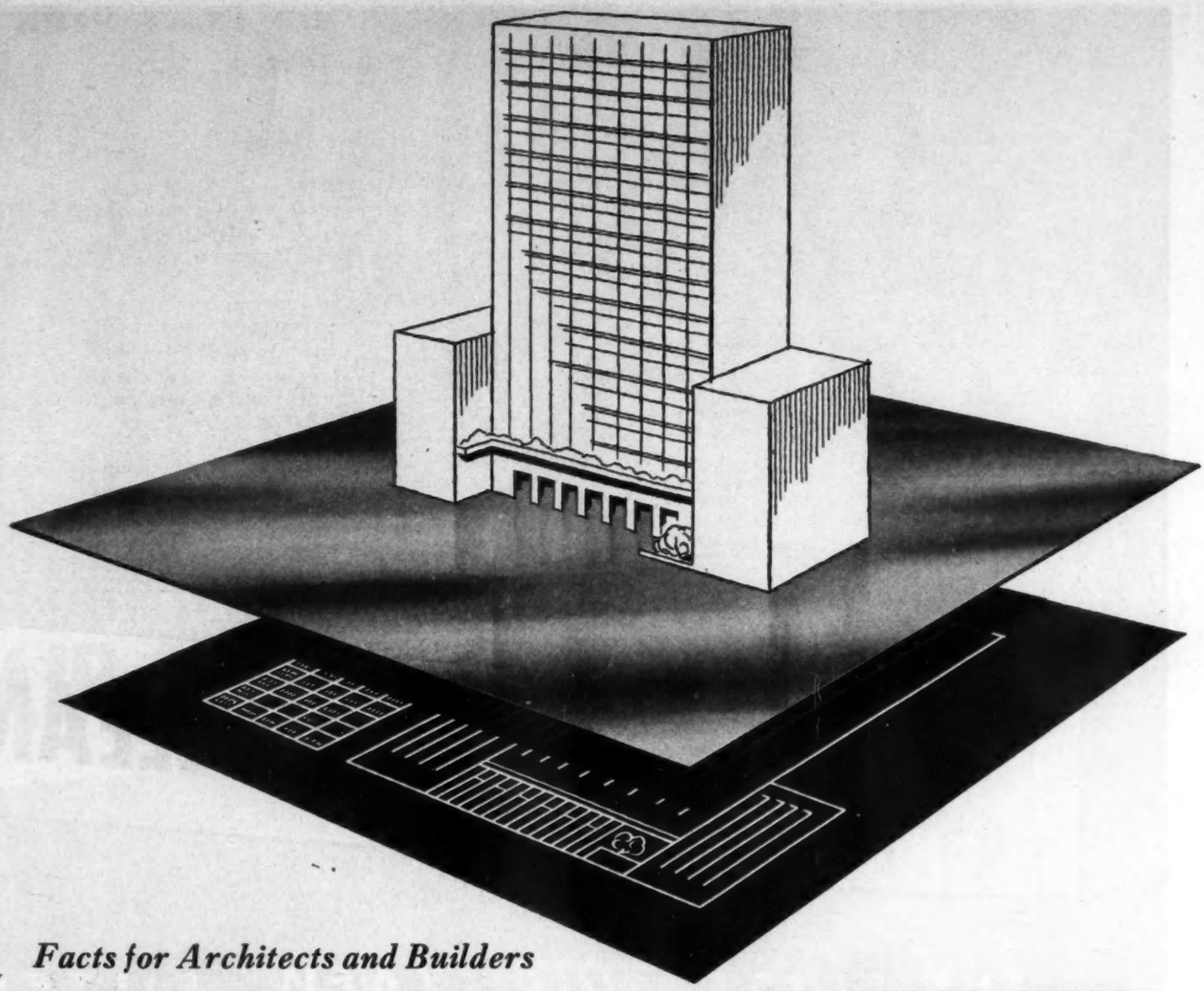
Amvit Jointed Clay Pipe is just one of the many products manufactured in our plants across the nation. American Vitrified Products Company also produces concrete pipe, clay pipe, liner plates, flue liners and wall coping—both glazed and unglazed.

For more information, write or call American Vitrified Products Company, National City Bank Building, Cleveland, Ohio, or our office nearest you.



The Amvit joint is made of a new acid resistant plastic material with rubber characteristics. Like the pipe, the joints will not be harmed by any condition of underground service. The pipe is simply pushed together. The trench is then ready for backfilling.

Plants Across the Nation... Brazil, Indiana • Chicago, Illinois • Cleveland, Ohio • Crawfordsville, Indiana • Detroit, Michigan • East Liverpool, Ohio Fenton, Michigan • Grand Ledge, Michigan • Lisbon, Ohio • Los Angeles, California • Milwaukee, Wisconsin • South Bend, Indiana • Uhrichsville, Ohio



Facts for Architects and Builders

about the profitable use of STAINLESS STEEL

Considered from the practical point of view, stainless steel is often the best, most economical material you can choose. For example:

Exteriors of stainless steel cut building weight by many tons. A .037" stainless wall weighs only 1½-pounds per square foot, compared to 48-pounds for a 4" brick exterior wall. That means you can design for less expensive foundations. And stainless means more rentable floor space . . . good insulation . . . fewer condensation problems.

Hardware, trim, railings and other parts that must take hard use, stay bright and new-looking indefinitely when they're made of stainless. Replacement and maintenance costs are greatly reduced.

Corrosion-Resistance of stainless presents an invisible armor against the attack of city atmospheres, smoke, rust or discoloration. Buildings *keep* the good looks you design into them . . . and, to your clients, stainless is economically superior to other less durable metals.

Maintenance costs take a dive when stainless is used. It never needs waterproofing, painting or refacing as most other materials do.

Installation of stainless presents no problem. Most bending, forming, trimming, drilling or surface finishing can be done in the shop . . . leaving only erection, final cleaning and inspection to be done on the site.

As a leading producer of stainless steels, Crucible is working closely with leading architects in developing new ways of employing stainless. Some of the results are available in a booklet called, "A Guide to Future Uses of Stainless Steel in Architecture and Building." Write now for your free copy. *Crucible Steel Company of America, Henry W. Oliver Building, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

★ This is not an idle claim . . . it's a fact . . . PROVEN UNDER ACTUAL INSTALLATION AND MAINTENANCE CONDITIONS.

Make no mistake about it . . . no matter how small your filter requirements . . . or how large, here is a completely new air filter development that can absolutely cut your clean air maintenance costs in half.

NO HEAVY TENSION OIL

Evans filters do not have a messy, sticky type of adhesive that is filthy to handle and difficult to clean. It is unnecessary and is forbidden in the use of Evans filters.

CLEAN WITH TAP WATER

Evans filters can be cleaned clean in minutes with nothing but tap water sprayed through an ordinary garden hose nozzle. They require no expensive room. No caustic cleaning solutions or agents. This eliminates all danger in the cleaning of Evans filters.

Evans Lifelong

GIVES *Lifetime* SERVICE

AIR MAINTENANCE COSTS!

DEVELOPMENT . . . IN 25 YEARS

LIGHT WEIGHT CUT LABOR COSTS

Evans filters are all aluminum. Light to handle, to carry, to pick up. In spite of airtight fitting frames, Evans filters pull quickly and easily in and out of the frames. Take much less effort, less labor to handle. No latches . . . or lugs required.

REMEMBER . . . Initial costs for air cleaning equipment are not the big factors or controlling factors in the cost for clean air.

IT'S OPERATING COSTS THAT YOU MUST LIVE WITH . . . THAT YOU MUST CONTROL. EVANS FILTERS GIVE YOU THAT CONTROL. MAKE IT POSSIBLE FOR YOU TO SAVE 50% ON CLEAN AIR MAINTENANCE COSTS.

- ALL ALUMINUM
- EVERY PART PRECISION MADE
- GIVES LIFETIME SERVICE
- HOLD UP TO 200% MORE DUST AND LINT . . . WITHOUT HARMFUL RESTRICTION TO AIRFLOW

FREE CATALOG MAIL COUPON TODAY

THE GEORGE EVANS CORPORATION • MOLINE, ILL.

Gentlemen: I wish to know how to cut my clean air maintenance costs in half with a filter that gives lifetime service. Please send me new illustrated catalog.

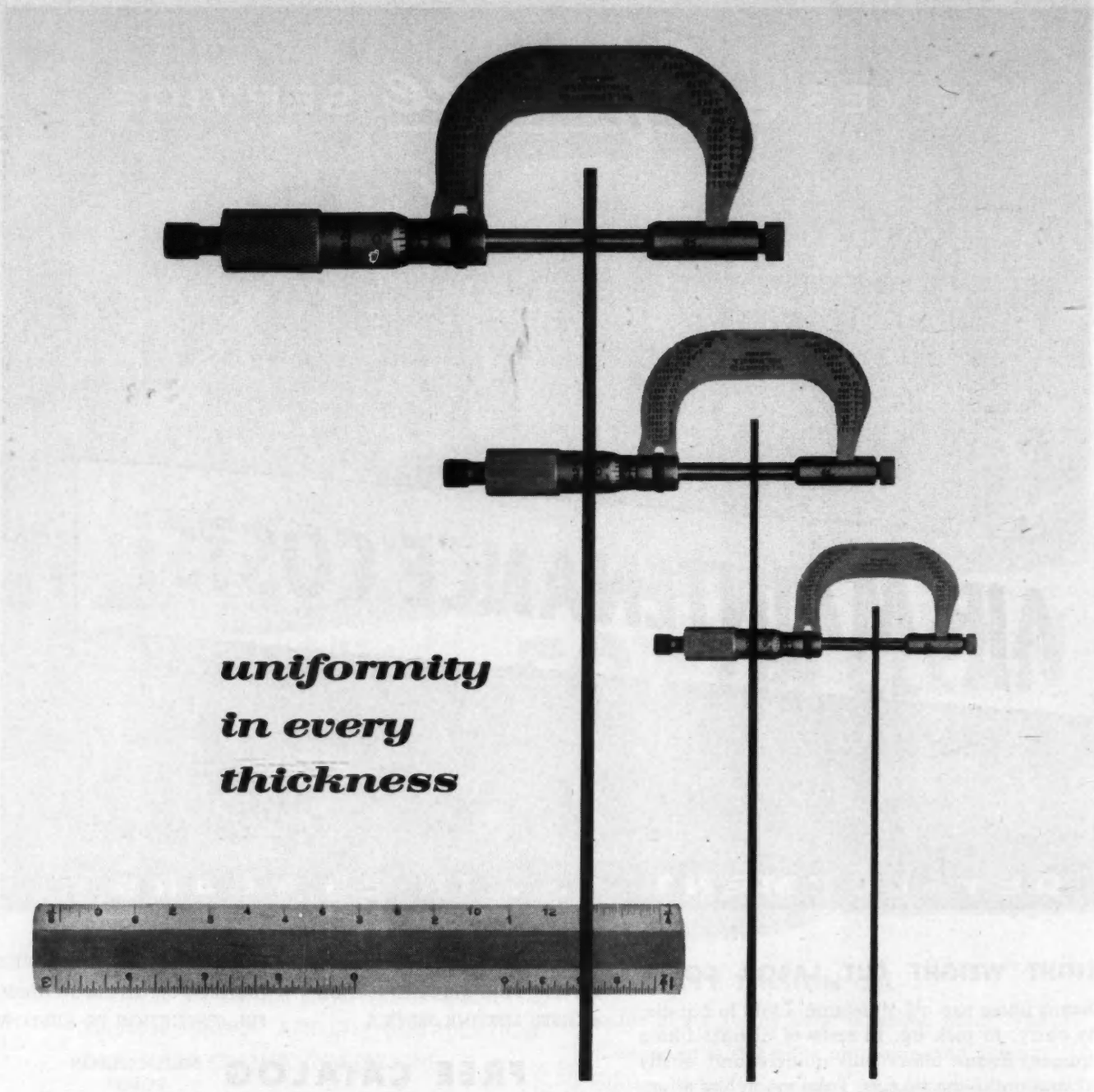
Name.....

Company.....

Address.....

City..... State.....

AIR FILTERS



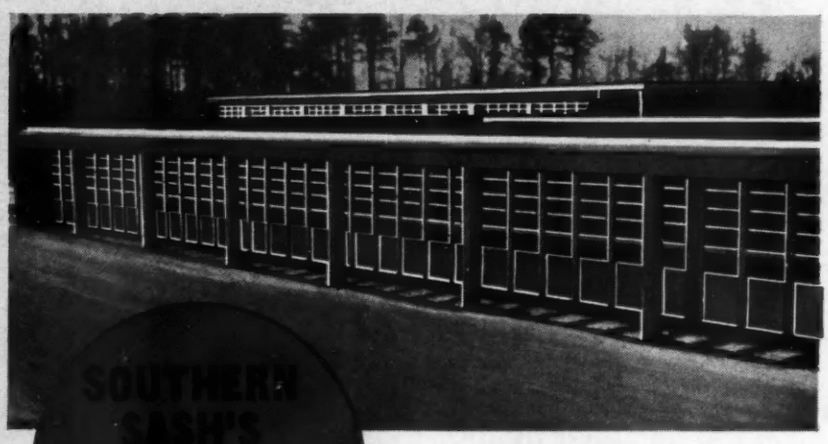
Careful checking and control throughout the entire manufacturing process keeps our resilient tiles completely uniform in thickness. This control begins with the analysis of raw materials, and continues through mixing, proportioning, and rolling. Accurate micrometer records are kept for each run, while laboratory technicians regularly chart viscometer flow rates during calendering. Uniform thickness, accuracy of cutting, trueness and clarity of color, surface smoothness, built-in durability and ease of cleaning and maintenance—all these qualities make this the world's most popular line of resilient tiles.

KENTILE, INC.

America's largest manufacturer of resilient floor tiles

KENTILE: Asphalt Tile...Carnival...Corktone • KENCORK: Cork Tile for Floors and Walls • KENRUBBER: Rubber Tile • KENFLEX: Vinyl Asbestos Tile...Carnival • ROYAL KENFLOR Vinyl Tile...CUSHION-BACK KENFLOR Vinyl Tile...also available by the yard • SPECIAL KENTILE: Grease-proof Asphalt Tile • THEMETILE, KENSERTS: Decorative Inserts • KENCOVE: Vinyl Wall Base • KENBASE: Wall Base

Ualco Awning Fenestration And Porcelain Enamel Panels, Is New, Practical Combination For Schools!



SOUTHERN SASH'S Ualco

school	McClintock Junior High School
location	Charlotte, North Carolina
architect	R. Edwin Wilson & Associates
contractor	E. G. Wilson Construction Co.

Aluminum Windows

Esthetic: Ualco's satin-smooth aluminum sections combined with Porcelain Enamel Panels—modern materials, complementary to each other and contemporary design — make an inviting facade to learning.

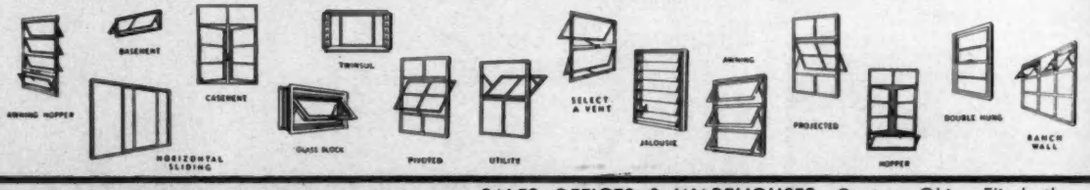
Psychological: Ualco's proportion of narrow sections of aluminum to large glass areas gives interiors wide-open feeling, eliminates hemmed-in feeling students reject.

Healthful: Ualco provides good control of ventilation. Ualco's exclusive strip-proof operator automatically unlocks, opens and locks vents in any position up to 90 degrees. Or—lower vent only opens slightly for draft-free ventilation during cold or rainy weather.

Structural: Ualco Awning Windows are Koroseal weather-stripped around perimeter of each vent, combine with Porcelain Enamel Panels which are surrounded with heavy Koroseal gasket . . . make window walls which are water-proof, wind-proof, rigid and **permanent!** Walls are easily assembled . . . go up on job site . . . panels "fall" into place. Construction takes standard mullions and accessory sections, no expensive extras . . . mullion widths are variable for variances in masonry openings.

See Our Catalog In Sweet's or Write Us for Complete Information — Architectural File 16A/U • Light Construction File 5A/UN

★ **ENGINEERING PLANNING SERVICE:** Assists architects, engineers and contractors in making "take-offs" and solving window problems.



SOUTHERN SASH SALES & SUPPLY CO., INC.
Sheffield, Alabama

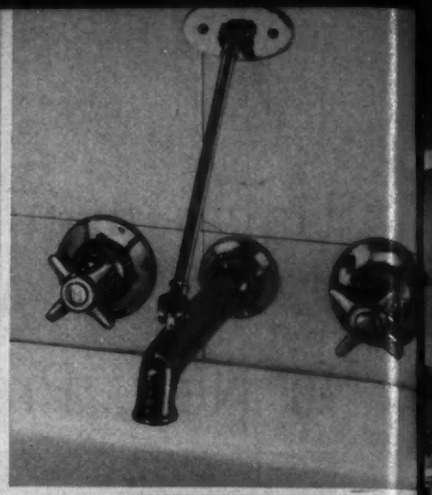
SALES OFFICES & WAREHOUSES: Canton, Ohio; Elizabeth, N. J.; Hialeah, Fla.; Florence, Ala.; Van Nuys, Calif.; Greensboro, N. C.; Ruston, La.; Montgomery, Ala.; Kansas City, Mo.; Washington, D. C.

World's Largest SOUTHERN SASH'S Ualco In More Buildings Than Any Other Aluminum Window.

UALCO WINDOWS ARE UNCONDITIONALLY GUARANTEED AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP

a

Entirely redesigned for modern styling and extra-long life, these American-Standard hospital fittings are finished in easy-to-clean, non-tarnishing Chromard. The NU-RE-NU valve assembly in these fittings means long, dependable service. Shown top left, centerset fitting with gooseneck spout; top right, built-in service sink fitting; bottom, combination fitting with gooseneck spout, spray and wrist-action handles.

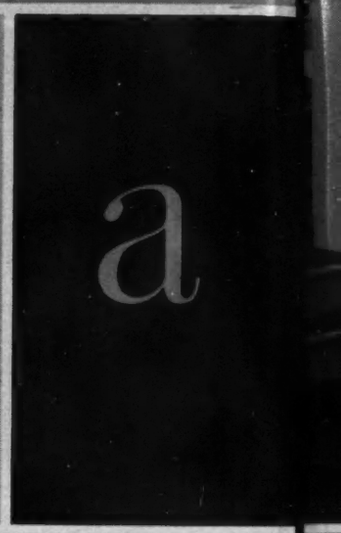


b

Convertible Cabinets of Durable Steel. The exclusive American-Standard convertibility feature provides more *usable* kitchen storage space. Sliding wire shelves and drawers of various depths can be specified for any of dozens of different, efficient storage combinations in the same base or undersink cabinet. The owner can add or relocate shelves and drawers at any time — quickly and without tools—to meet new storage needs.

c

Combination Lavatory and Vanity Shelf. This smart-looking one-piece Guestledge lavatory-counter combination is especially suitable for use in hotel or motel baths. It's a notable space-saver, since the toilet in the bathroom can be so positioned as to serve as a dressing table seat. Of genuine vitreous china with non-tarnishing Chromard fittings, the Guestledge is low on maintenance, high on guest appeal.

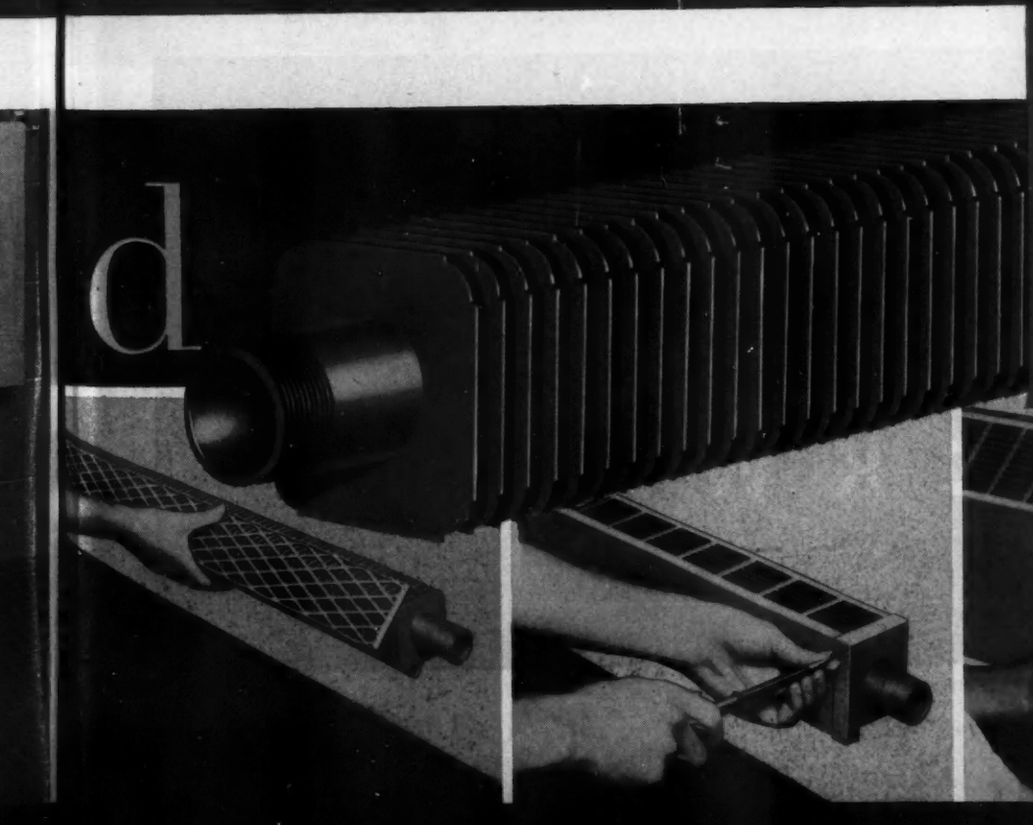


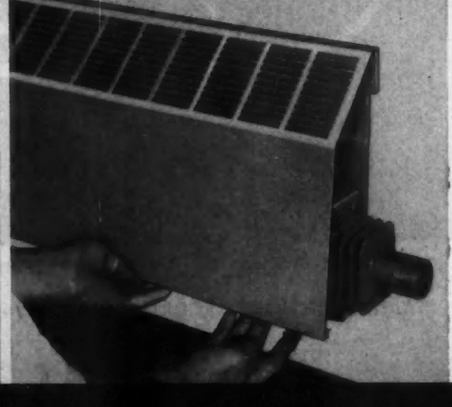
Picture studies in function and d

d

Temtrim Finned Tube Radiation. Hundreds of steel fins bonded to a steel pressure tube make Temtrim one of the most efficient, economical types of radiant heating ever built. Temtrim can be used with forced hot water or two-pipe steam systems. It is mounted on simple wall brackets, and can be installed with fins exposed or with any one of three attractive covers — shown left to right: a snap-on expanded metal grille, a flat top cover, a sloping top enclosure.

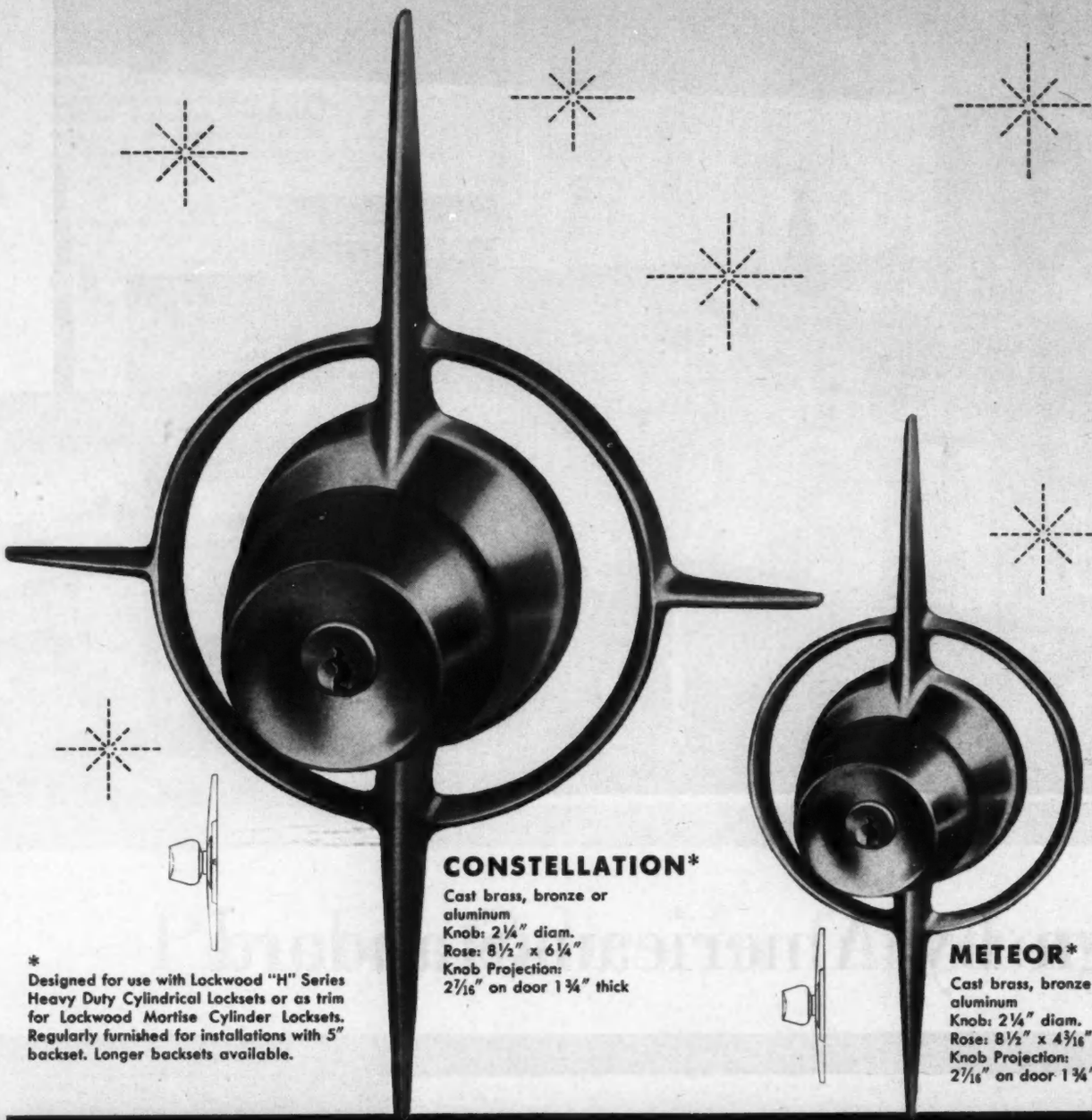
nddesign by American-Standard





These are just a few of the many plumbing, heating, cooling and kitchen products made by the Plumbing and Heating Division, American Radiator & Standard Sanitary Corp., P. O. Box 1226, Pittsburgh 30, Pa.

AMERICAN-Standard



CONSTELLATION*
Cast brass, bronze or aluminum
Knob: 2¼" diam.
Rose: 8½" x 6¼"
Knob Projection:
2 7/16" on door 1¾" thick

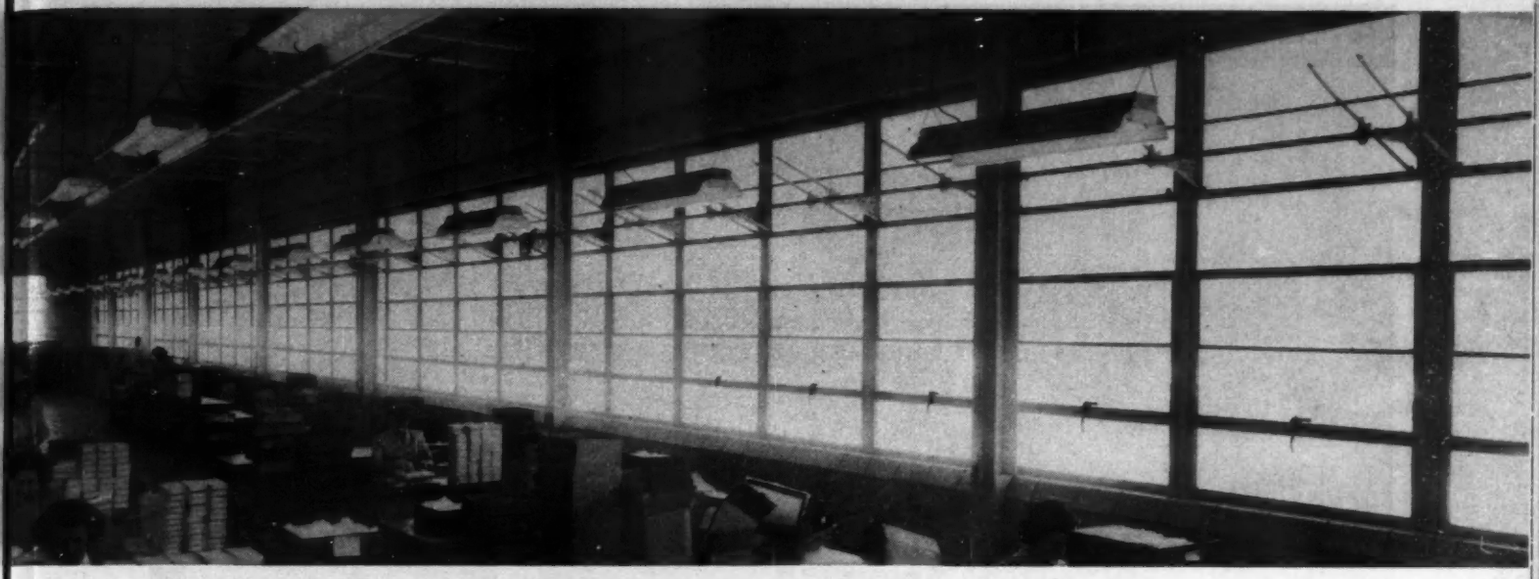
METEOR*
Cast brass, bronze or aluminum
Knob: 2¼" diam.
Rose: 8½" x 4 3/16"
Knob Projection:
2 7/16" on door 1¾" thick

* Designed for use with Lockwood "H" Series Heavy Duty Cylindrical Locksets or as trim for Lockwood Mortise Cylinder Locksets. Regularly furnished for installations with 5" backset. Longer backsets available.

Superb
in quality, in beauty –
two brilliant new designs by
LOCKWOOD

LOCKWOOD HARDWARE MANUFACTURING COMPANY • FITCHBURG • MASSACHUSETTS

Bring in lots of daylight



Filter it through Frosted *Aklo*® Glass

...best light for good workmanship

Eyes were made for daylight. People feel good in it. But two things can keep it from being ideal . . . glare and sun heat.

That's the "why" of Frosted *Aklo* Glass. It softens and diffuses transmitted daylight, reducing glare of direct sun, bright sky and dazzling reflections. And *Aklo* is a subdued blue-green color—just naturally relaxing to eyes.

Aklo Glass absorbs sun heat as the light passes through —reradiating much of it back outdoors. *Aklo* Glass in ¼" thickness shuts out as much as 44% of the sun's radiant energy, and it looks cooler, too.

This all adds up to better daylight for good workmanship, more comfort, better employe relations and reduced air-conditioning costs.

PHONE FOR THIS TEST

A call will bring a radiometer demonstration kit to your desk. It shows you how *Aklo* Glass reduces glare and sun heat. Call your L·O·F Glass Distributor or Dealer listed under "Glass" in the yellow pages of your phone book. Or write to Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.

AKLO GLASS **FILTERS DAYLIGHT**

made by Blue Ridge Glass Corp.

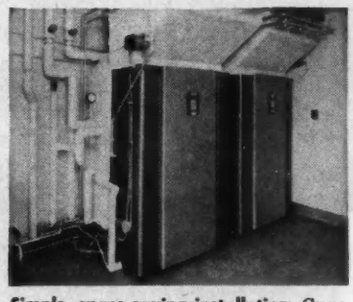
sold by Libbey-Owens-Ford Glass Distributors

G. E. HAS THE ANSWER TO AIR CONDITIONING PROBLEMS IN ANY STORE, OFFICE, OR FACTORY

One of four operating rooms at Mercy Hospital in Canton, Ohio. These, with sterilizing room, make up five zones that are "comfort serviced" all year 'round by two 5 ton G-E Packaged Air Conditioners.

HOSPITAL AIR CONDITIONS OPERATING ROOMS... SAVES ON EQUIPMENT, DUCTWORK, SPACE

Heat-gain and heat-loss studies showed that 16 tons of air conditioning were required for the four operating rooms, one sterilizing room of Mercy Hospital in Canton, Ohio. But Niagara Heating Co., local G-E contractors, found a way to give the effect of this tonnage with only two 5 ton G-E units—*saved the cost of six tons* by feeding water from the Hospital's own well to a preconditioning coil and then to the G-E units. Duct runs were minimized by locating G-E units in doctors' rest area, handy to operating rooms. Space requirement: only 34 square feet. Larger equipment would have entailed roof installation and much higher costs. Write for data to: General Electric Co., Commercial and Industrial Air Conditioning Dept., 5 Lawrence Street, Bloomfield, N. J.



Simple, space-saving installation. Compact size of G-E units permitted their location in the lounge of the doctors' rest area—no space wasted—no long duct runs.

Safety and sanitation are of paramount importance in installations of this type. It is recommended that the services of a consulting engineer generally be employed in this kind of application.

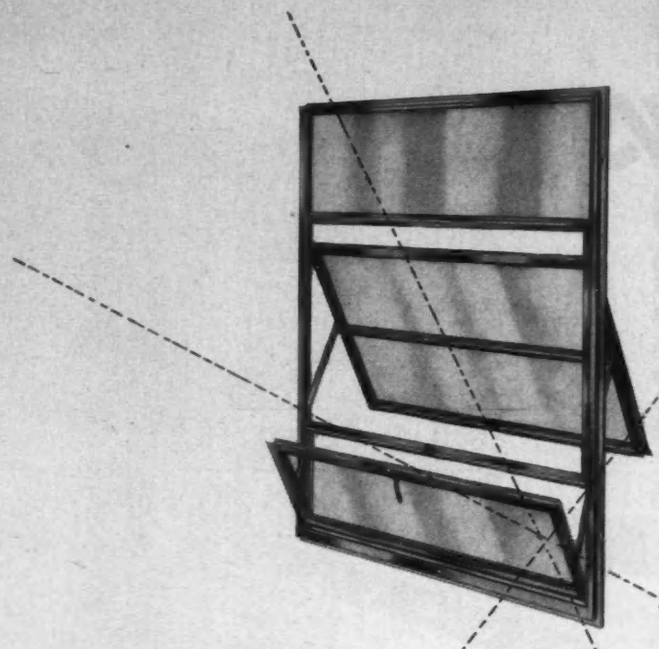
G-E PACKAGED AIR CONDITIONERS OFFER MORE:

- *Low installation, low operating costs.*
- *Gives the architect maximum design freedom. Units can be used in space or concealed, with or without ducts.*
- *Streamlined cabinet styling. Adds to decor of any interior.*
- *3, 5, 7 1/2, 10 and 15 ton units can be used singly or in multiple to meet air conditioning needs of any building.*
- *Easily directed airflow for no-draft, no-waste air circulation.*
- *Muggy Weather Control removes excess moisture in any weather without over-chilling or clammy cooling.*
- *Built and factory assembled by General Electric. 5-year warranty covers entire sealed cooling system.*

Packaged AIR CONDITIONERS

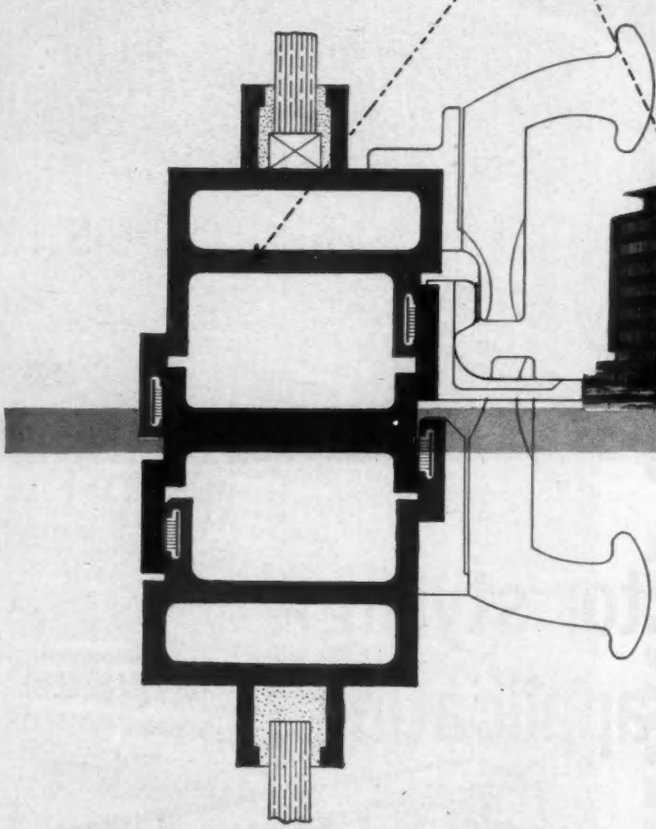
Progress Is Our Most Important Product

GENERAL ELECTRIC



Cupples aluminum windows specified

because owner insisted on the best



MEADOWS BUILDING, Dallas, Texas

First of a proposed group of buildings in the "Oil Center"

J. N. MacCammon, Architect

Cowdin Bros., Contractor

MEETING RAIL SECTION OF CUPPLES PROJECTED WINDOWS USED IN MEADOWS BUILDING

The heaviest, strongest projected window manufactured. Developed for monumental structures, this window is double weatherstripped for maximum weather-tightness. Welded tubular rails with integral glazing beads insure strength and rigidity. Variations can be glazed with Thermopane or Twindow.

From its Grecian marble lobby to its Cupples projected and double hung windows, every detail of this magnificent building bespeaks enduring quality.

This is another example of the wide acceptance of Cupples Aluminum Windows where sound design and precision fabrication are of first consideration. And architects and builders have found that Cupples Windows can be specified without increase in construction estimates.

With the most complete line of commercial windows of any manufacturer, Cupples offers a wide variety of types to meet every requirement. Cupples is also a leader in curtain wall construction and a manufacturer of aluminum doors, architectural aluminum extrusions, alumi-coustic grid systems for suspended ceilings and special ornamental products. Our catalogs are in Sweet's.

MEMBER, ALUMINUM WINDOW MANUFACTURERS ASSOCIATION.

Cupples

PRODUCTS CORPORATION

2658 South Hanley Road • St. Louis 17, Missouri

The latest in convector styling—designed for every application

Now public, commercial and institutional buildings—old or new—can be equipped with beautifully styled, efficient, quality-built Modine Convectors. There's a model to meet every requirement—30 types, 8000 sizes.

And each model . . . regardless of its price bracket . . . is craftsman-built in every detail . . . the reason why Modine has been a leader in convector design and fabrication for more than a quarter of a century.

Before you specify or buy convectors, be sure you have the Modine story. See the Modine representative listed in your classified phone book or write for Catalog 255—Modine Mfg. Co., 1510 DeKoven Ave., Racine, Wis.

30 types 8000 sizes
There's a Modine Convector to meet your exact needs: Deluxe, standard and institutional models—free-standing, fully and partially recessed, concealed and wall-hung types with many design variations.
Modine
CONVECTOR RADIATION
R-1273

ALUMINUM IN MODERN ARCHITECTURE

COMMONWEALTH PROMENADE APARTMENTS

(pictured below)

and 900 ESPLANADE APARTMENTS, CHICAGO.

BUILDERS AND DEVELOPERS:

Herbert S. Greenwald and Samuel N. Katzin

ARCHITECT:

Ludwig Mies van der Rohe, Chicago

ASSOCIATE ARCHITECTS AND ENGINEERS:

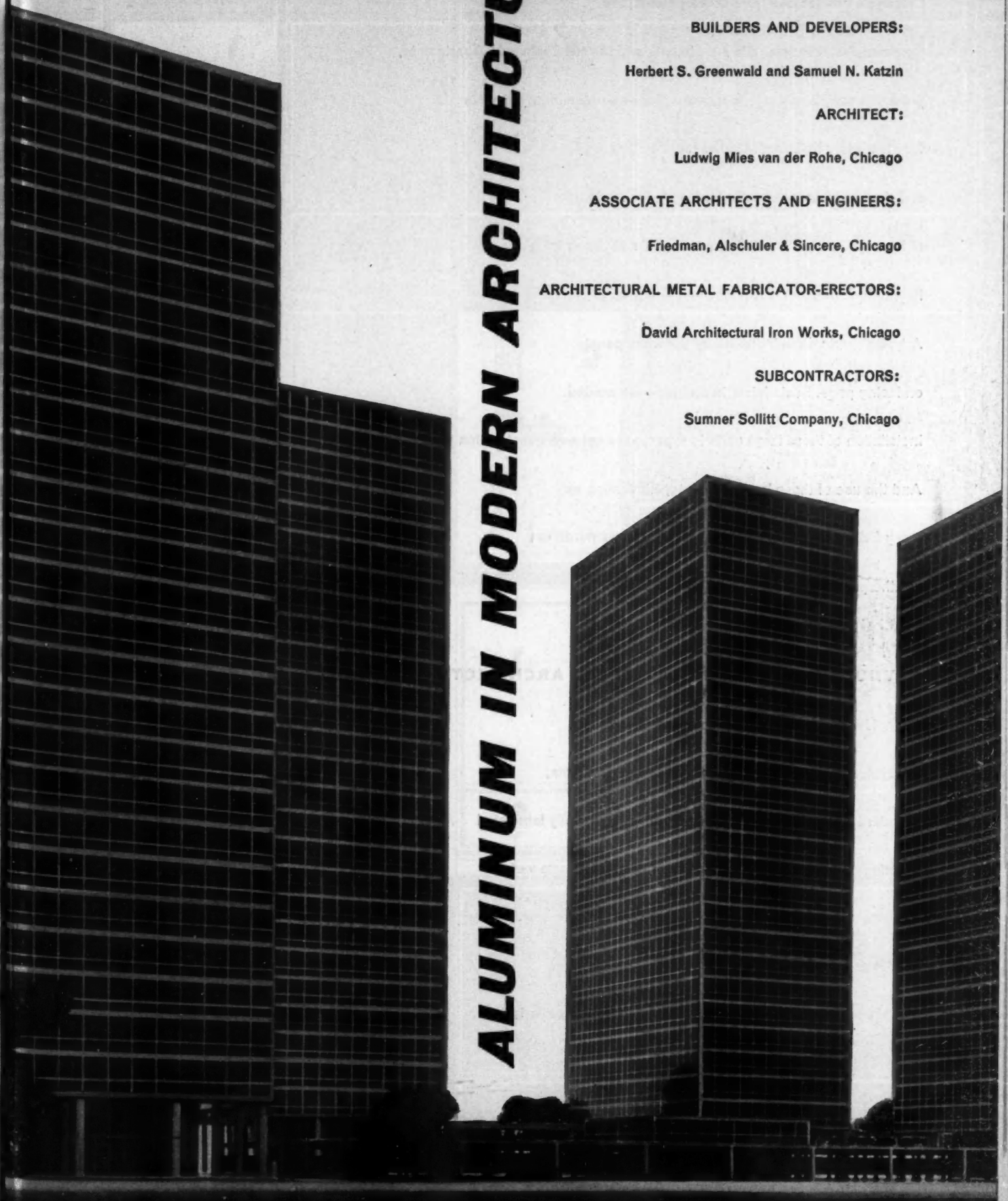
Friedman, Alschuler & Sincere, Chicago

ARCHITECTURAL METAL FABRICATOR-ERECTORS:

David Architectural Iron Works, Chicago

SUBCONTRACTORS:

Sumner Sollitt Company, Chicago



New concept in multi-story exteriors

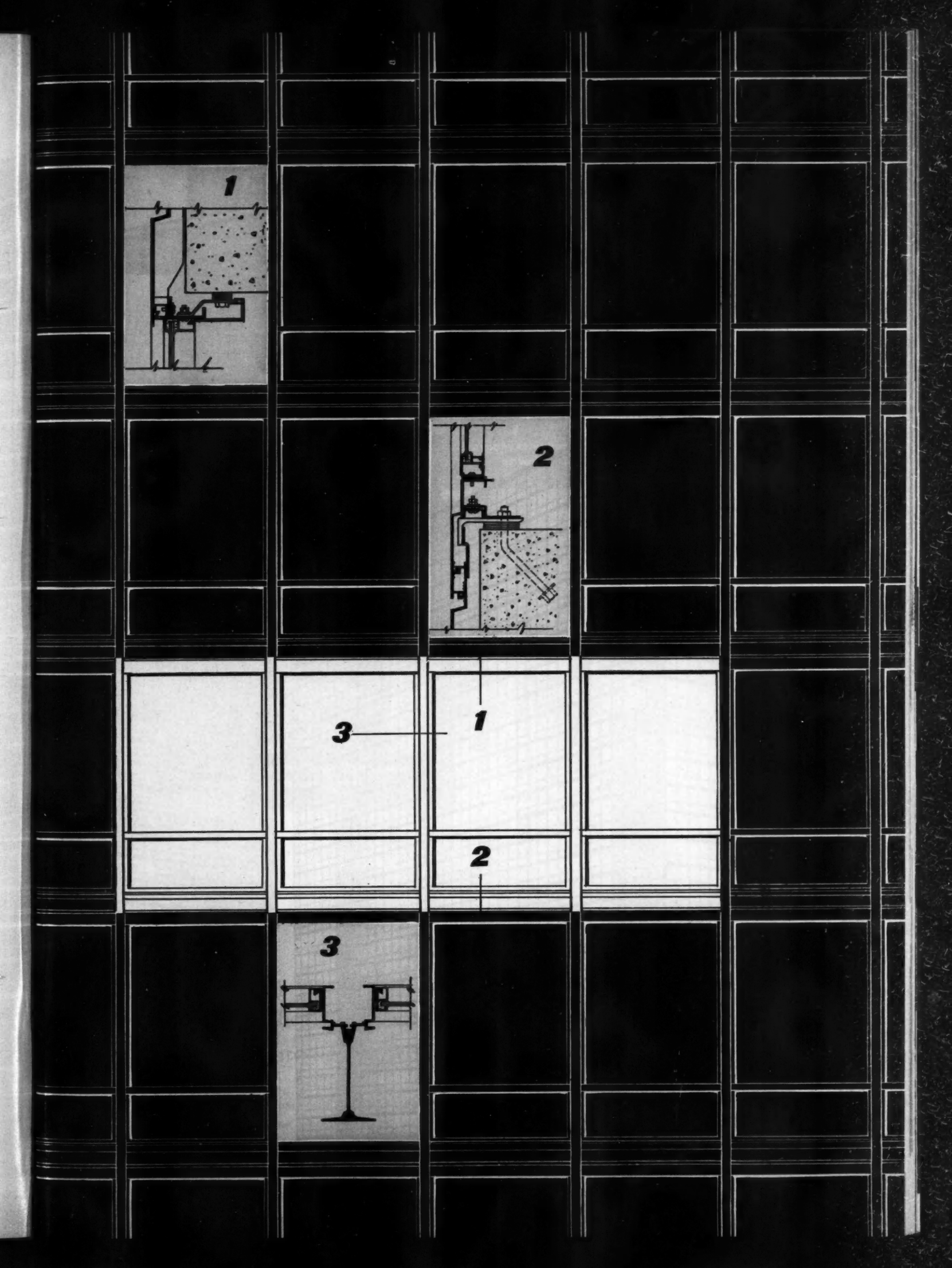
Chicago's newest lake front developments, the Commonwealth Promenade Apartments and the 900 Esplanade Apartments, present a unique advance in modern glass-and-aluminum exteriors for multi-story buildings. On the four 28-story and the two 29-story structures, the skin is made up of large grids prefabricated to nominal 9′ x 21′ sizes from Reynolds Aluminum extrusions and anodized in complete units. A typical grid unit is indicated by the white panel on facing page. Basic joints in the grids are welded. Installation of these large units is expected to set new construction records. And the use of these large elements, eliminating as many field-erection joints as possible, assures maximum weatherproof protection.

REYNOLDS ALUMINUM SERVICE TO ARCHITECTS

Reynolds Architect Service Representatives offer specialized assistance on aluminum design problems, standard mill products applications and commercially fabricated aluminum building products. They can help coordinate varied aluminum needs for procurement efficiency and economy. Address inquiries to Architect Service, Reynolds Metals Company, Louisville 1, Ky.

REYNOLDS ALUMINUM

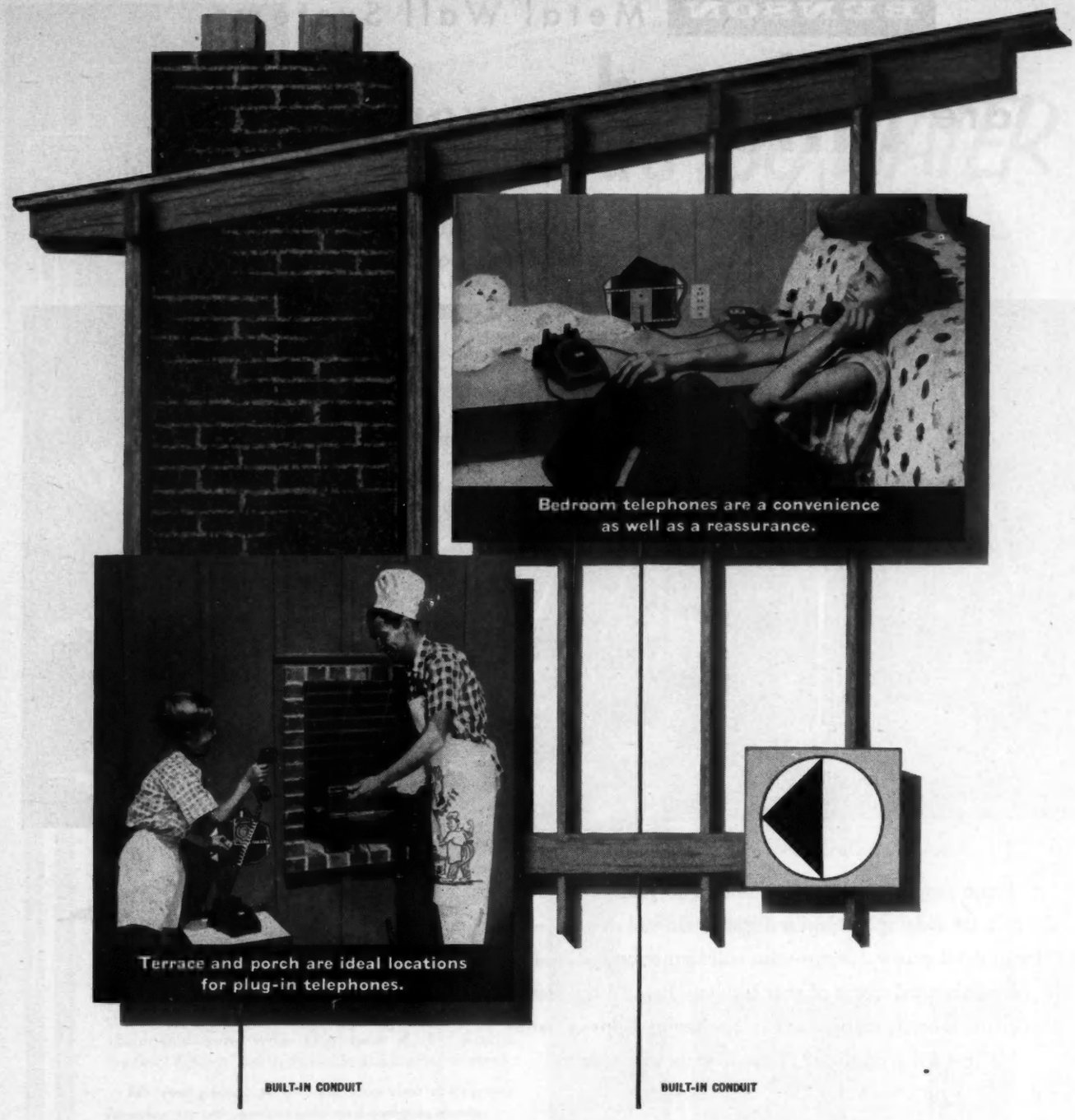
Reynolds Metals Company, Louisville 1, Ky.


1
2
1
3
2
3

REYNOLDS ALUMINUM IN MODERN ARCHITECTURE

900 ESPLANADE APARTMENTS, CHICAGO

These structures differ from the preceding Commonwealth Promenade Apartments in that the aluminum grids are anodized black.


Bedroom telephones are a convenience as well as a reassurance.
Terrace and porch are ideal locations for plug-in telephones.
BUILT-IN CONDUIT
BUILT-IN CONDUIT

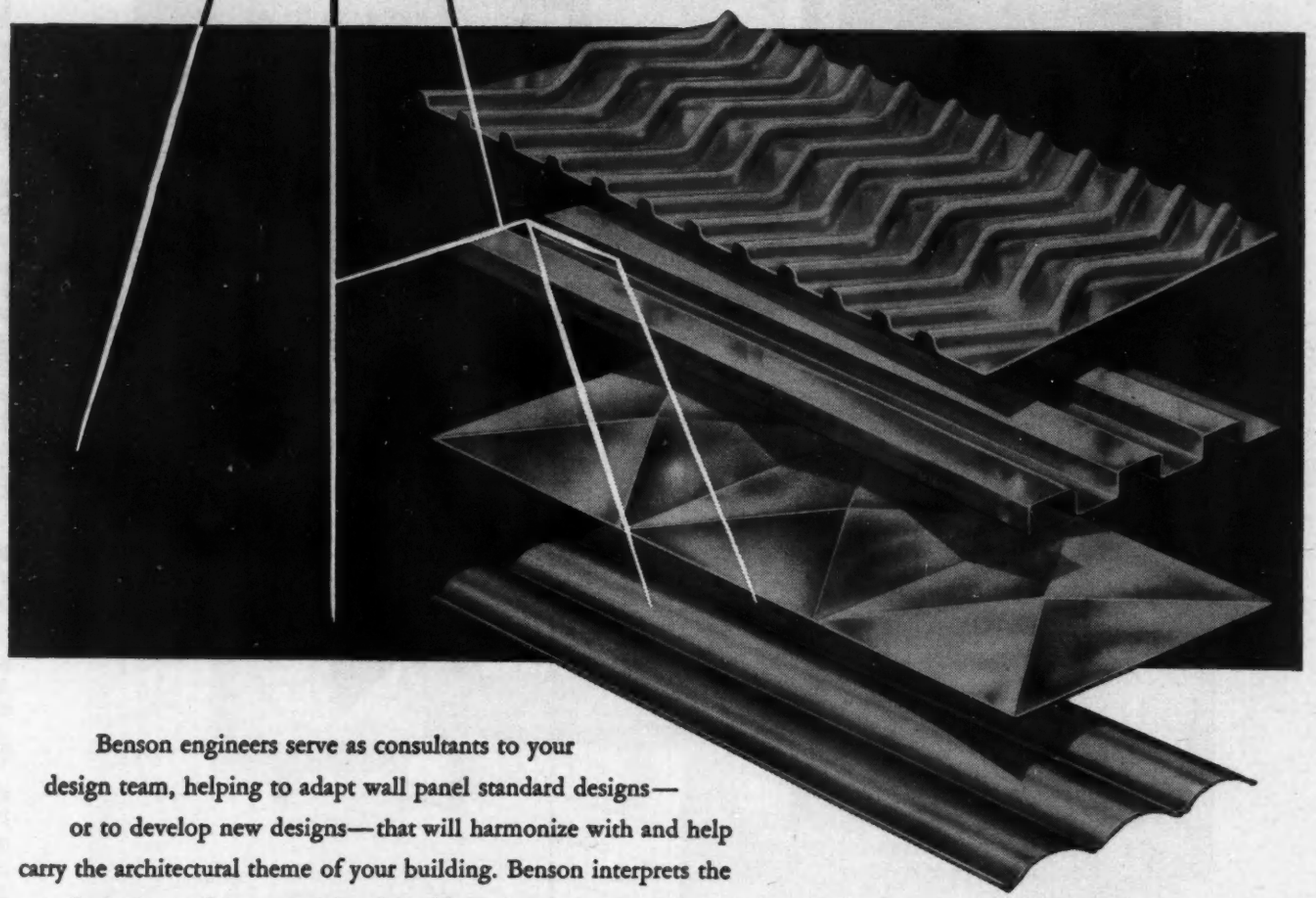
Modern, step-saving telephone conveniences are marks of the well-planned home, especially when you specify built-in conduits. Wire-free walls add beauty and satisfaction at little extra cost. Be sure to specify telephone conduits.

Your Bell telephone company will be glad to help you work out economical conduit installations. For details on home telephone wiring, see Sweet's Light Construction File, catalog 8i/Be, or just call your nearest business office. **BELL TELEPHONE SYSTEM**

BENSON Metal Wall Systems

are tailored to your designs

Benson is one of a very few who offer substantial press capacity in the home plant, for forming and deep drawing of large metal wall panels in a wide range of stamped geometric designs.



Benson engineers serve as consultants to your design team, helping to adapt wall panel standard designs—or to develop new designs—that will harmonize with and help carry the architectural theme of your building. Benson interprets the limitations of the material and its fabrication, helps to realize the full possibilities of this modern wall system.

The Benson metal wall system includes exterior and interior wall panels, extruded aluminum windows, doors, and entrances. Our experience in the fabrication of metals to minute tolerances goes back almost 50 years.

mailed promptly on request

New Benson AIA File No. 17A, design and specification suggestions for metal wall systems.

SINCE 1907

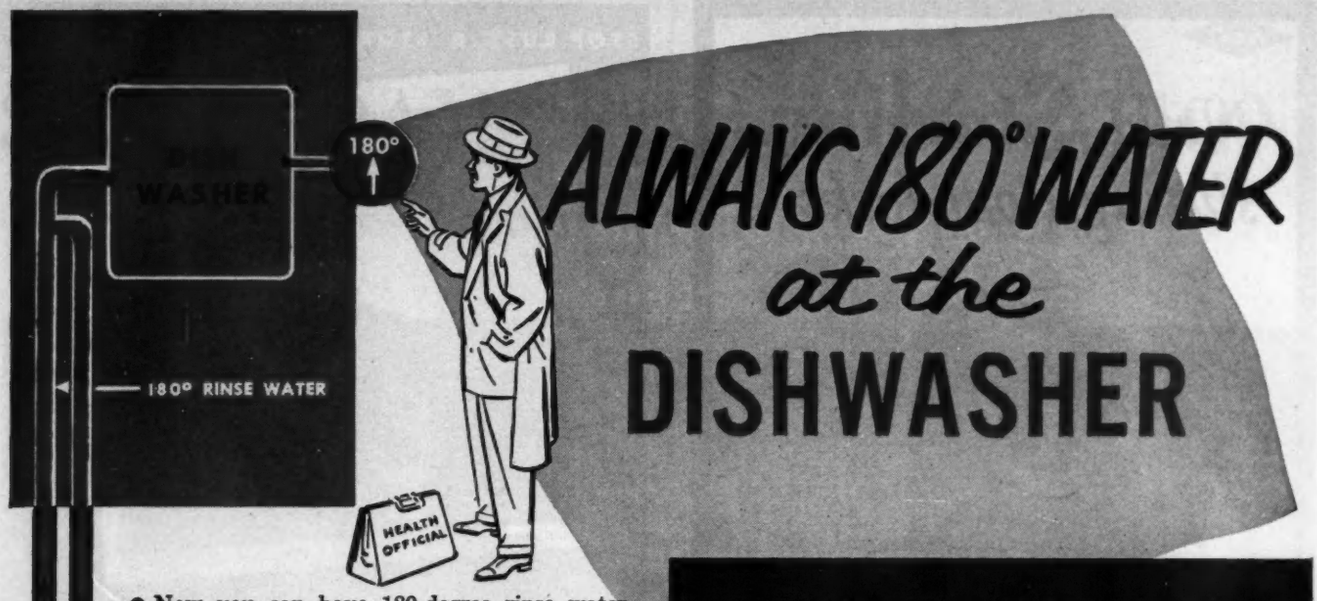
Architectural Division **BENSON MANUFACTURING CO.**

18TH & AGNES • KANSAS CITY, MISSOURI

LOS ANGELES • NEW YORK

BENSON

B



ALWAYS 180° WATER at the DISHWASHER

● Now you can have 180-degree rinse water *at all times* at the dishwashing machine for complete dishware sanitation . . . instantly . . . even on the first rinse.

This is possible with the new A. O. Smith Burkay Shure-Temp* Booster Recovery System. With this modern installation, there is no chance for the water to cool below proper sanitizing temperature between rinse draws . . . you always have 180-degree sanitizing water at the dishwashing machine to provide the proper bacteria kill on all dishes being processed.

Standard Number 3 of the National Sanitation Foundation Standards, states: ". . . Because of the necessary intermittancy in the use of sanitizing rinses, installations should include definite provisions for preventing the cooling below 180° F. of water in pipeline between heaters or storage tanks and the dishwashing machines as by recirculation. Adequate and dependable thermostatic controls shall be installed and used to maintain such hot water supply at not less than 180° F." Why take chances with the vital restaurant hot water rinse supply to the dishwasher when you can be absolutely sure with this new A. O. Smith Burkay Shure-Temp Booster-Recovery system.

See your nearest A. O. Smith distributor or your gas company for competent counsel and complete details.

"Plenty of HOT water pays ALL ways"

NEW A.O.Smith Burkay

*Shure-Temp**

BOOSTER RECOVERY SYSTEM

Through research ... a better way

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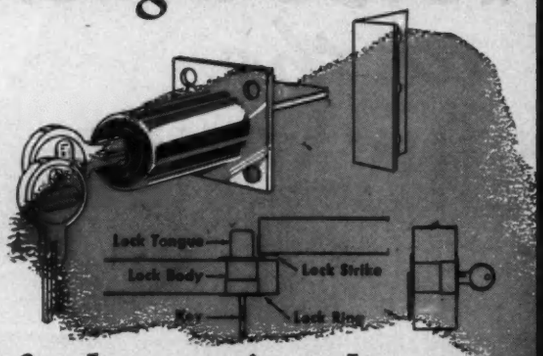
CORPORATION

PERMAGLAS DIVISION
KANKAKEE, ILLINOIS

*Patent applied for

With a Burkay heater you secure these advantages—copper construction for clean, rust-free hot water; sturdily designed for long, service-free life; patented burner and heat exchanger for remarkable operating economy and instant heat response to hot water demands.

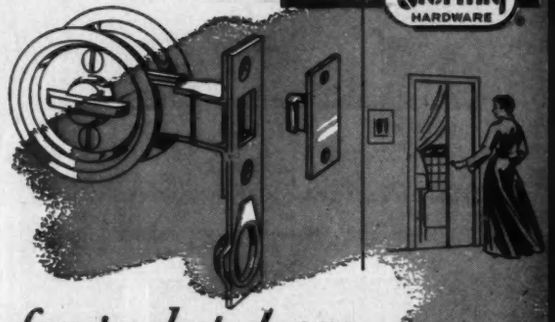
New! Sterling® *sliding door locks...*



for by-passing doors

The first sliding door lock for by-passing doors. Now closets can be locked and contents kept secure from pilferage. Designed on a revolutionary new principle. One half turn of key raises tongue to locked position or returns it to unlocked position. Cylinder is geared to tongue and action is positive. Simple to install—bore one hole. Fits ¾" to 1¾" doors.

Sterling HARDWARE



for pocket doors

A new type of lock for bathroom or bedroom doors. Privacy is assured by turning locking button on inside. Emergency button on outside permits unlocking with screw driver or coin. Neat, simple installation. Fits 1⅜" or 1¾" doors.

Sterling means Quality

STERLING HARDWARE MFG. CO.
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Hot-Dip Galvanized

Corrosion is costing the United States over five billion dollars a year, according to figures recently released. Companies today are taking a hard look at rust prevention costs. They are finding that Hot-Dip Galvanizing is the best solution to their problems. They know that items like chain-link fence, roofing, gutters, window sash, and many others will last longer if Hot-Dip Galvanized after fabrication. Over a period of years maintenance costs are kept to a minimum.

When you specify rust protection for your new buildings, specify Hot-Dip Galvanizing, the best rust protection you can buy. For the best in Galvanizing, have your products sent to a member of the AMERICAN HOT DIP GALVANIZERS ASSOCIATION—he has the know-how to give you a top quality job.

Send today for our new booklet "Stop Rust." It gives you the full story on the process, plus a comprehensive coating comparison chart. "Must It Rust" 16 mm film available for showing.

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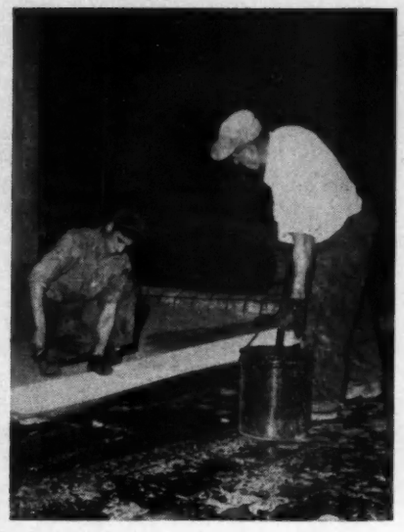
DOW

STYROFOAM SLAB INSULATION

provides permanent moisture barrier



St. Thomas Aquinas College, Sparkill, New York. Architect: Eggers & Higgins, New York, New York. Insulation Contractor: Julius Watsky, Inc., Mt. Vernon, New York.

1½" of Styrofoam were dipped in asphalt emulsion and placed on a sand over gravel bed. 15 lb. felt was then put on top of the insulation, and a re-enforced concrete slab then poured.

St. Thomas Aquinas College uses STYROFOAM under the basement floors of two new buildings to keep dampness out forever

When the buildings of this modern, new college in Sparkill, New York, are weather-worn and ivy-covered, their basement floors will still be bone dry and warm. They're insulated, and protected from ground moisture by Styrofoam® (Dow expanded polystyrene).

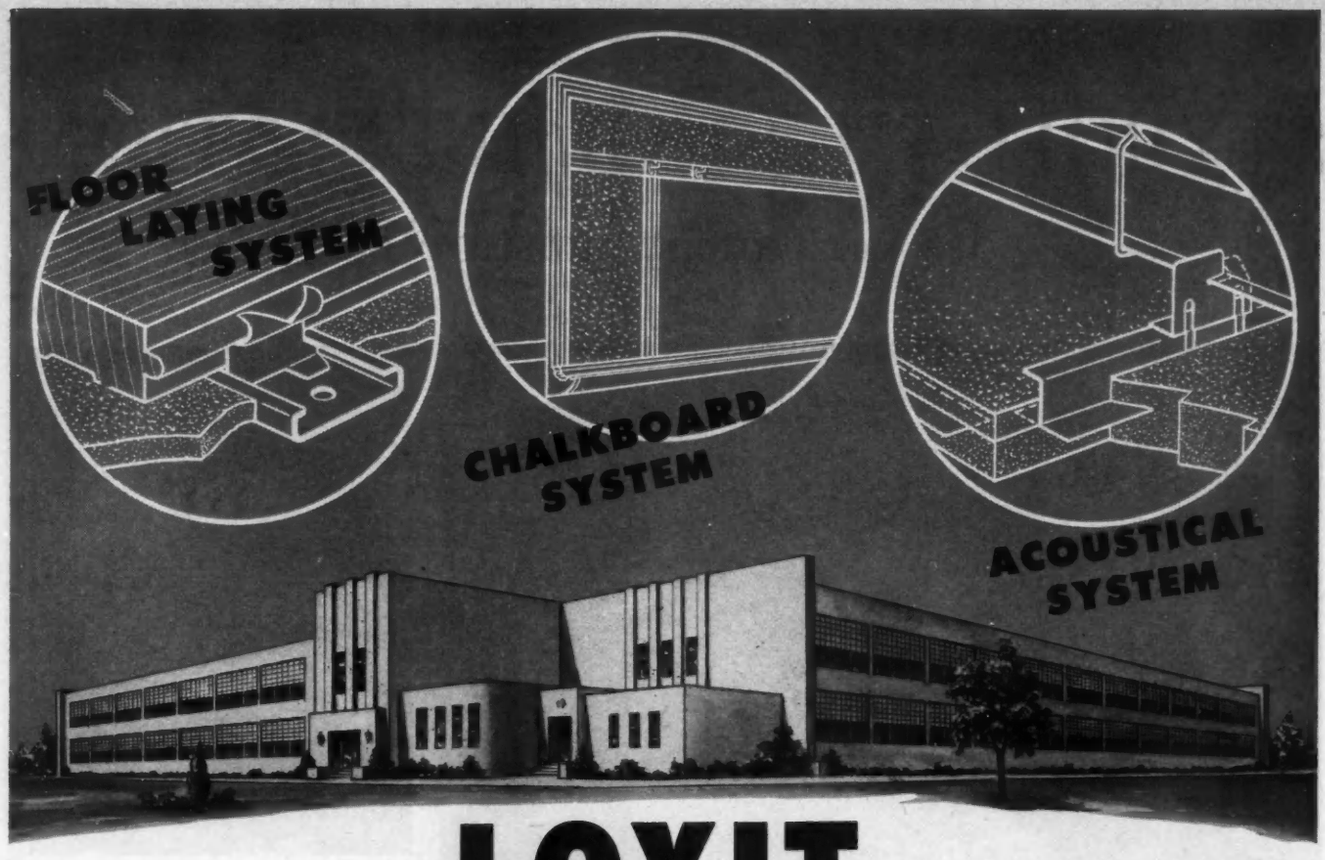
Styrofoam is a permanent insulating material. It's highly resistant to rot, mold, vermin and deterioration, has high structural strength. Because its non-interconnecting cellular structure eliminates water absorption, its low "K" factor *stays* low.

In addition, Styrofoam speeds installation. It's light, clean, easy to handle . . . comes in convenient 3′, 8′ and 9′ lengths which can be easily cut to size with ordinary tools. It's available in varying widths and thicknesses, and can be easily bonded to itself and other materials.

The unique combination of Styrofoam properties makes it excellent for slab insulation, perimeter use, as a low-temperature insulation and as an insulation for solid or core type masonry walls. For further information contact Dow Sales Department PL 571J, or write or phone your nearest Styrofoam distributor. THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW PLASTICS

DOW

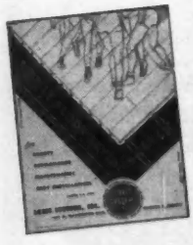


LOXIT

Well-Planned Successful Installations

LOXIT FLOOR-LAYING SYSTEM

A simple, practical mechanical system which solves the problem of wood floors laid on concrete. Only three basic parts are required—the Loxit channels, the concrete anchors and Loxit steel floor clips. The wood flooring is laid in the same way that a nailed floor would be laid, but instead of using nails to fasten flooring, a cleverly designed steel clip is used. The clips automatically adjust themselves to the tongue and groove of the flooring, locking the floor boards together and to the Loxit channel. Everything locks together in the Loxit wood floor system.



LOXIT CHALKBOARD SYSTEM

Here's a COMPLETE system that provides answers to all your chalkboard problems. It includes a full range of chalkboards: LOXIT-TYLAC Rite Green and Darkrite Green Chalkboards, KOMPO-CITE chalkboards, PETRALOX Cement-Asbestos Chalkboards, and PORCELOX Porcelain Steel Chalkboards . . . LOXIT-TYLAKORK Tackboards . . . LOXIT TRU-SNAP All-Aluminum Trim for both plastered-in and surface-applied installations . . . and accessory items.

LOXIT VICTORY ACOUSTICAL SYSTEM

The "XYZ" of dependable acoustical suspension systems. Type "X" Regular was engineered to care for conditions where furring channels are being used as the supporting structural members for the suspension system. Type "Y" Surface-Applied meets those conditions where no suspension is involved, with tiles being applied directly to the ceiling. Type "Z" combines type "X" and type "Y" and provides facilities for leveling the suspension members of the system.

Consult Your Architect—
He Can Save You
Time, Trouble and Money

THERE'S a place for these Loxit Systems in your plans. They simplify construction problems, meet unusual conditions, assure permanent beauty and reduce maintenance costs. All Loxit Systems have one thing in common: they are simple in principle. Because of this, they are easy to erect and assure years of trouble-free service. Consider these advantages in your own planning.

Literature, samples and catalogs are available. Write today.

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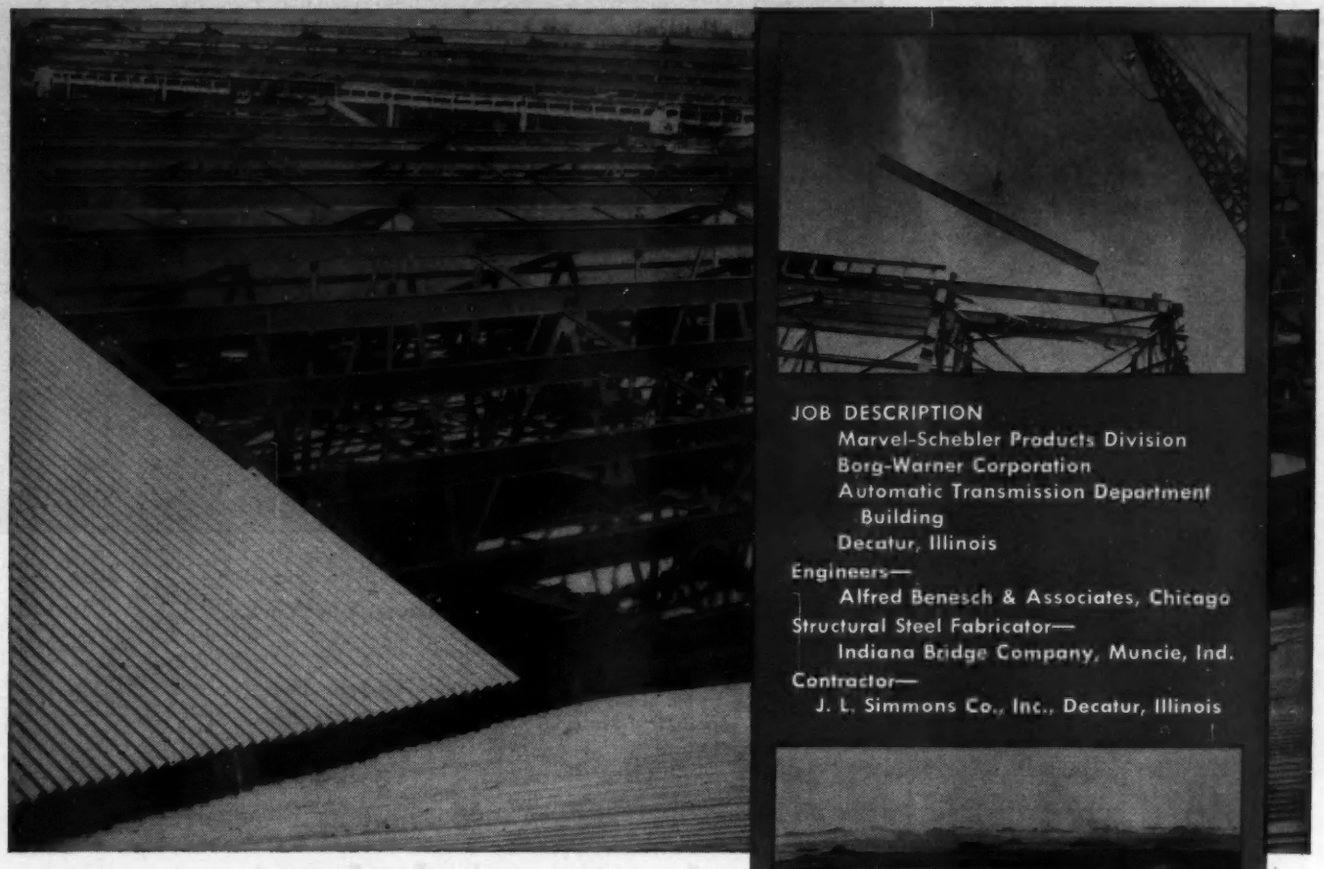
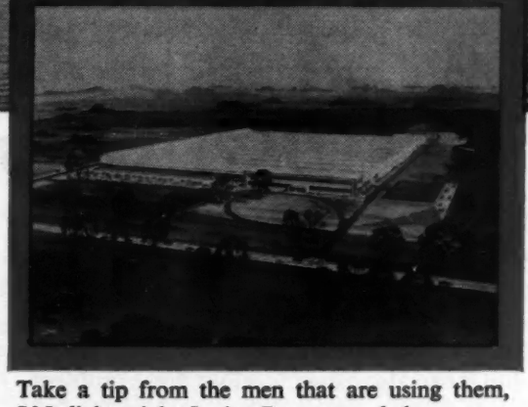
BUILDERS BEAT A DEADLINE WITH J&L JUNIOR BEAMS



JOB DESCRIPTION
Marvel-Schebler Products Division
Borg-Warner Corporation
Automatic Transmission Department Building
Decatur, Illinois
Engineers—
Alfred Benesch & Associates, Chicago
Structural Steel Fabricator—
Indiana Bridge Company, Muncie, Ind.
Contractor—
J. L. Simmons Co., Inc., Decatur, Illinois



2400 tons of steel structurals, including over 500 tons of J&L Junior Beams, in 75 days . . . that was the "unusual" erection schedule laid down for the new automatic transmission building of Borg-Warner Corporation's Marvel-Schebler Products Division. And the schedule was met with a few days to spare!

The men on the job give lightweight Junior Beam roof purlins a big share of the credit for this outstanding accomplishment. Here are just some of their reports.

"The time for delivery of steel . . . was the essence of the contract. We chose J&L Junior Beams because of their availability, simple fabrication and ease of erection."

H. E. WRAY, Assistant General Manager
INDIANA BRIDGE COMPANY

"We could never have met the schedule that was laid down without these J&L Junior Beams. They have a wider seating area and double footings which gave our workmen a safer, faster area of moving around aloft. If we had used the usual channels, we would have had to slow down for safety's sake. We would have had foot room on only one side of the bottom of the channels, compared with a place on either side for a man to get foot support on the beams."

CECIL STODGHILL, Construction Superintendent
INDIANA BRIDGE COMPANY

Take a tip from the men that are using them, J&L lightweight Junior Beams can help you cut building costs. Experience shows that J&L Junior Beams are the most economical hot rolled purlin sections available. They're adaptable, easy to install, rigid and vibration resistant.

Write today for more information on this modern lightweight J&L structural.

Jones & Laughlin Steel Corporation
466 Gateway Center, Pittsburgh 30, Pa.

☐ Please send me a free copy of your booklet on J&L Junior Beams.
☐ Please send me comparative cost figures on purlin sections.

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Company_____
Address_____
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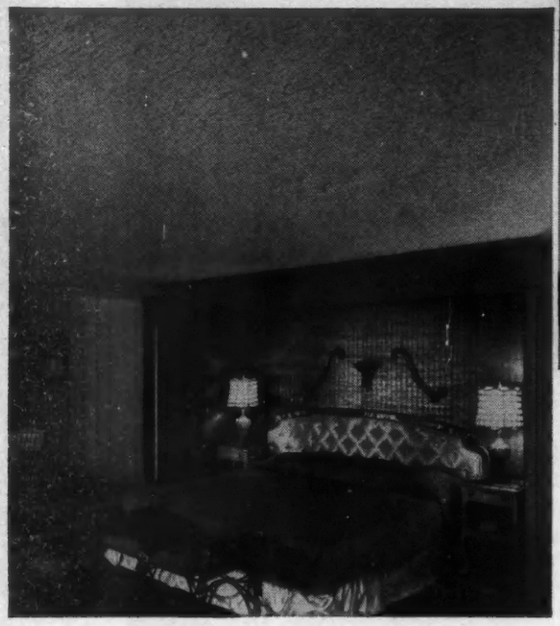
Jones & Laughlin
STEEL CORPORATION — *Pittsburgh*

J&L STEEL

JUNIOR BEAMS ARE READILY AVAILABLE FOR PROMPT DELIVERY

Restful quiet in the open-planned living-dining area is largely due to the noise-muffling Travertone ceiling. Travertone soaks up reflecting sound waves from the room's many hard-surfaced areas, preventing noise from building to disagreeable levels.

Luxurious beauty is added to the master bedroom by the distinctive ceiling of noise-absorbing Travertone. Upkeep is easy and economical, too. Travertone can be kept attractive and new looking for many years with only an occasional cleaning or paint job.



GERNON RESIDENCE, Harrison, New York

Designer-Builder: J. D. Gernon

Acoustical Contractor: Hannam & Schede, Inc.

Acoustical Material: Armstrong Travertone*

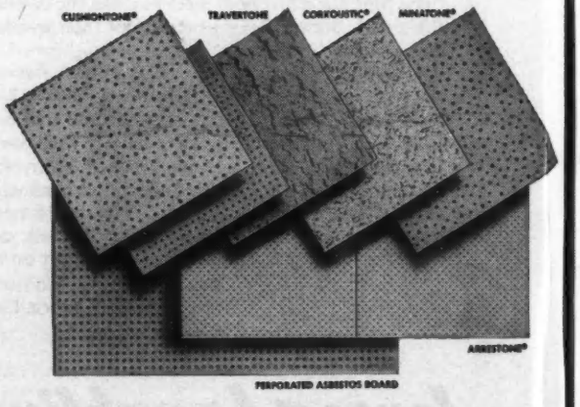
Open-planned home sound conditioned for comfort

An open-planned interior provides spaciousness in the modern house, but it can also cause a serious noise problem. Considering the number of noise-making appliances in today's home, the natural boisterousness of children, and the busy routine of most families, it's very easy for noise to get out of hand. Sounds reflected off walls, floors, and other hard surfaces bounce back and forth from one area to another, quickly building to disturbing proportions.

To solve the noise problem, builder J. D. Gernon installed sound-absorbing ceilings of Armstrong Travertone throughout his new home in Harrison, New York.

This over-all use of Travertone sound conditioning makes the open-planned interior and hard terrazzo floors more practical. Travertone's high acoustical efficiency soaks up as much as 80% of the noise that strikes it. A distinctively fissured material, Travertone has the smart appearance of travertine marble. It blends well with the terrazzo floors and helps provide a relaxing setting for the pleasing combination of contemporary and traditional furnishings.

Your Armstrong Acoustical Contractor will be glad to give you full details on Travertone and the complete line of Armstrong sound-conditioning materials. For the free booklet, "Armstrong Acoustical Materials," write Armstrong Cork Company, 4208 Rock Street, Lancaster, Pennsylvania.



Armstrong

ACOUSTICAL MATERIALS

* TRADE-MARK

"A time to cast away stones, and a time to gather stones together"

Ecclesiastes III: 5

On Thursday, July 7, 1955 Frank Lloyd Wright appeared in Washington before the Subcommittee on Department of the Air Force Appropriations of the House of Representatives.

There he spoke at length of the incompetence of the design for the Air Force Academy, its architects and the architectural advisers to the Secretary of the Air Force.

That he did not like the design will come as a surprise to exactly no one. His massive contempt for literally all save his own efforts is one of his best known and least noble characteristics.

This contempt, added to his early and continuing eagerness to do the job himself, suggests that his criticism may be virtually free of objectivity. Although it may be suggested also that the tentative nature of the presentation makes his criticism premature as well, few will question his right to criticize.

Many will be saddened at the manner of the criticism and at the seeming irresponsibility in his deliberately disdainful evaluation of the architects and architectural advisers.

Of architects Skidmore, Owings and Merrill he said, among other derisive things, "I think they have five or six hundred draftsmen, and the two men at the head of it, what do they know about architecture?" In reply to a question about their stature as architects: "I would not use that word stature in regard to them." And later: "If you want something that represents feeling, spirit, and the future, they have not got it."

Of the advisers he had this to say of architect Welton Becket: "I do not know him but I know of him. I wish that something would happen to him soon. I would hate to see his things going as they are going now."

Of architect Eero Saarinen, only: "His father wanted me to train him architecturally. That is the young boy."

Of architect Pietro Belluschi: "He is a teacher. He has done some very nice little houses, but he has had no experience as a builder."

When the foregoing were further identified to Mr. Wright as the consultants, he had this to say: "I could not imagine anything that would make a bad matter worse."

And finally, as a clincher to his appeal that he be given the opportunity to prepare preliminaries for the design, he said of the whole group: "None of those men that you have mentioned to me could ever conceive a thing, so what is the use of monkeying along with it?"

This is the man who has so proudly proclaimed — and did so again to the subcommittee — that he has "never joined the

architectural profession because they have never lived up to their so-called ethics."

Someone must dare to suggest that in his public utterances it has been a long time since Mr. Wright has served well the cause of architecture; and that in this appearance he has rendered a distinct disservice to his country as well.

We need an Air Force Academy. We do not need the divisive, disruptive delays that this back-biting will bring. We will get an Air Force Academy. It may very well fall short of our dreams; most buildings do. But we need buildings and must continue to build them; always as effectively and often as swiftly as we are able. And to do this and to bring to bear all our developing technology on increasingly complex problems, architects and engineers must work patiently with each other and with their clients and between them there must exist the greatest sympathy and understanding and mutual confidence. Everything must be done to achieve this goal. Anything which is done to frustrate it — deliberately or unwittingly, in malice, in blind egoism, or in the name of an art which will be honored only as its artists are honored and honorable — must be identified as frustrating the welfare of the country.

The nature of architecture changes but the need for sincere and sympathetic architects remains. Those who deride and demean their fellow artists risk rendering the art trivial in the eyes of all. For those who wonder why the architect is often suspect in the public eye read the full transcript of Mr. Wright's testimony and reflect that for fifty years he has been telling the people of America that their architects are foolish, grasping, charlatans. And like fawning dogs, too many architects have continued to whimper their pleasure at even being mentioned.

Year after year he has been invited back to the lecture halls of our schools and museums where in a curious variation of masochism our faculties and students have bared themselves to his lash. Those not whipped into discouraged despair at his gloomy prediction of their ultimate failure may, under this tutelage, actually come to believe that braggadocio and scornful intolerance are the proper attitudes for the truly gifted artist. It is not an inspiring leadership for young people of talent whose greatest purpose in the schools Mr. Wright so despises may be to discover that men set apart by their God-given talents must labor the more to identify themselves with their fellows in order that those talents may come to fullest fruition.

The great contributions of Frank Lloyd Wright are inevitably being matched by those of other great artists. His achievements in abuse may yet, and tragically, become more distinguishing than his achievements in building.

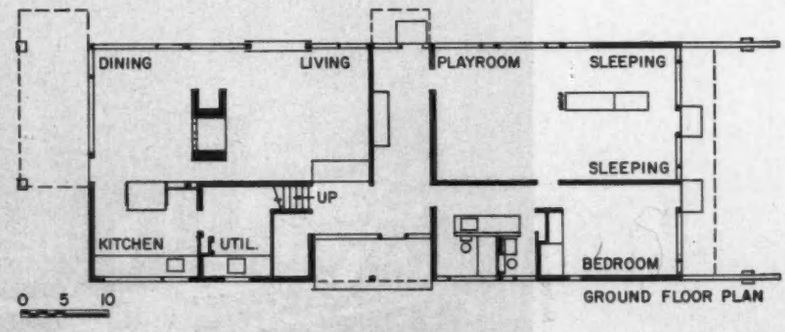
John Knox Shear

VACATION HOUSES

House for Mr. and Mrs. Herbert M. Agoos, East Andover, N. H.

Charles Burchard and William Lyman, Architects

Joseph W. Molitor



GROUND FLOOR PLAN

VACATION HOUSES

Herbert M. Agoos (continued)

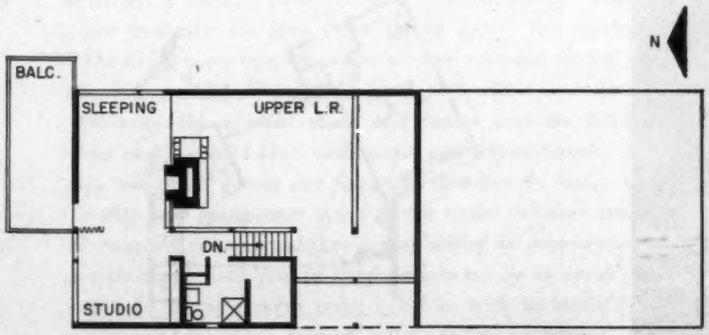
THIS HOUSE, on the shore of a New Hampshire lake, was originally planned for weekend use only and for building in two stages. Before the first stage had been completed the owners had changed their final plans to an all-summer residence equipped for possible future use the year 'round. The completed house, therefore, has aluminum foil and glass fiber insulation and a hot air furnace in the newer bedroom wing, plus radiant electric heating in the ceilings of the original wing.

The owners are particularly pleased with "the quality of the interior space" — the combination of openness and privacy achieved by the two-story living room, the partially-enclosed dining area, the balcony bedroom, and the versatile children's quarters. Every room in the house has cross ventilation and quick access to the outdoors.

Construction is wood frame on a concrete foundation. Exterior walls are fir. Floors are flagstone or rubber tile over concrete. Cost is difficult to estimate because of two-stage construction, but first stage cost approximately $13,000 and second stage about $18,000, excluding utilities and masonry work.

Joseph W. Molitor

Opposite: size of living room is visually extended by two-story height, glass wall, and flagstone floor merging with terrace flagstones. Right: top, living room walls are waxed fir; upper center, dining area is well protected from entry, but partially open to living room, adding to spacious feeling; lower center, master bedroom overlooks living room, has adjoining deck and studio; bottom, children's sleeping and play areas were planned for maximum flexibility, ventilation, ease of upkeep

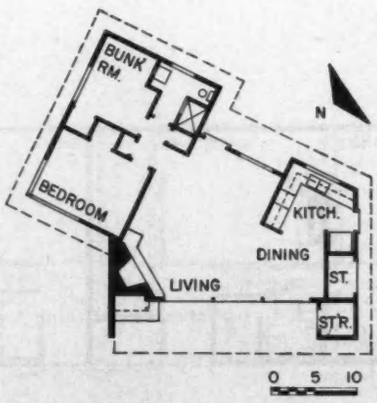


UPPER FLOOR PLAN

VACATION HOUSES

House for Mr. and Mrs. John Girand, Oak Creek Canyon, Arizona

Harold Ekman, Architect

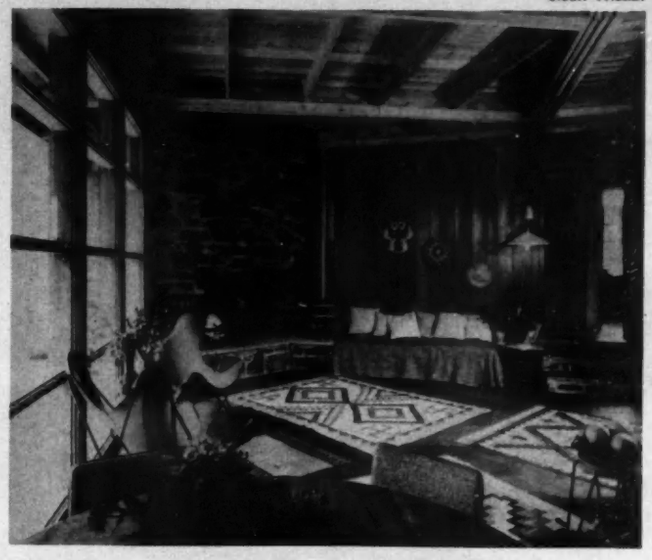


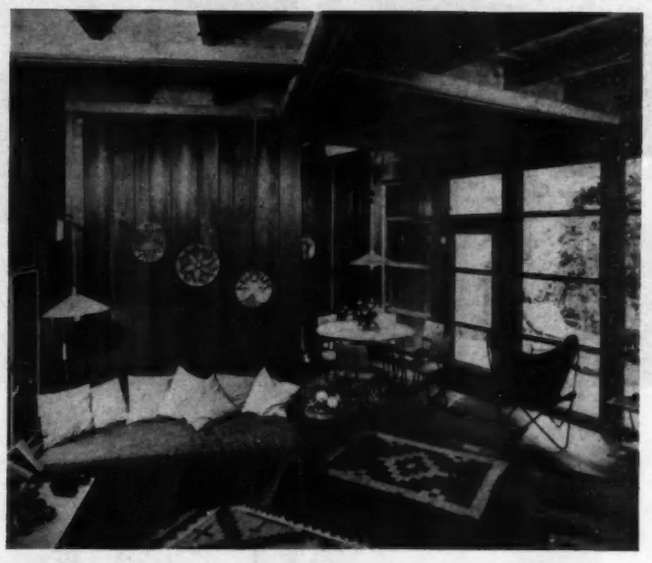
THE OWNER of this mountain cabin is a consulting engineer with a literary flair. "I have worked for, with and against architects for lo! these 20 odd years," he writes, "during which time I have become thoroughly convinced that subdividers can provide four walls and a roof, but it takes an architect to design a home. I didn't have to tell mine anything. He knew we had two boys, who can catch fish with dough-balls (a bait made of soggy bread kneaded with dirty little hands, a truly most unsavory mess) while their elders with expensive dry flies come home with empty creels. He provided the boys' room with bunk beds and a wall with a 'secret panel' to hide such treasures as a rusty jackknife and an old top and a real live 'horny toad' and a Boy Scout compass. I didn't have to tell him the cliff across the creek was there; he saw it and put the glass front in the living room. I didn't have to tell him that the sun comes up north of east in the summertime — he skewed it (not the sun, the house) around on the lot so breakfast is sun and luncheon is shade and dinner is moonlight and roses.

"The site sloped towards the creek, hence the two-level arrangement between sleeping and living areas. The front door is in back (away from the creek, I mean), with a terrace and more steps up to a large car-parking area woven between quince bushes and an old apple tree. In front, the living room floor continues through the glass wall with a flagstone patio overlooking a tranquil pool below a waterfall.

"It's just about as perfect a summer home as could be found this side of Valhalla."

Stuart Wiener



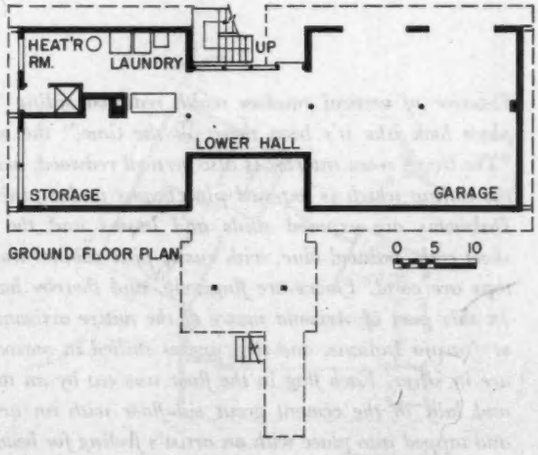


Exterior of vertical random width redwood siding "makes the place look like it's been there all the time," the owner says. "The living room interior is also vertical redwood, waxed, except the ceiling which is exposed pine beams under pine sheathing. Bedrooms are exposed studs and beams and the kitchen is sheet rock, painted blue, with rustic pine cabinet work; counter tops are coral. Floors are flagstone, and thereby hangs a tale. In this part of Arizona many of the native artisans are Hopi or Navajo Indians, and they are as skilled in masonry as they are in silver. Each flag in the floor was cut by an artist's hand and laid in the cement grout sub-floor with an artist's touch and tapped into place with an artist's feeling for beauty"

VACATION HOUSES

House for Mr. and Mrs. Mortimer M. Denker, Westhampton Beach, N. Y.

Huson Jackson, Architect; H. Seymour Howard, Jr., and Harold Edelman, Associates



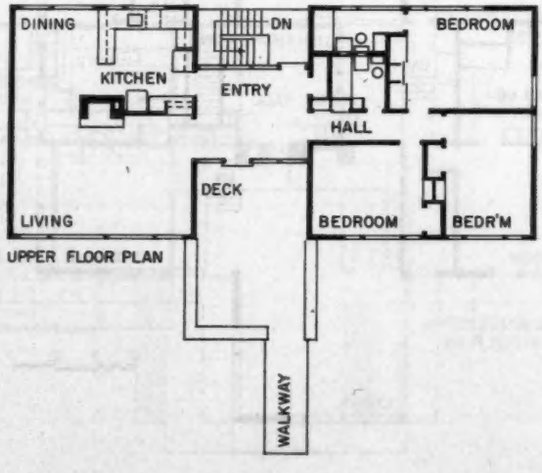
GROUND FLOOR PLAN

A SLOPING SITE facing the ocean to the south and a bay to the north made a two-story plan the logical one for this beach house. All main rooms are on the upper level, with the living room and two of the three bedrooms on the south side where they have a clear view over the dunes to the ocean. The deck, too, is on this side of the house, located to take advantage of the best view and still be partially sheltered from the wind. Dining area, kitchen and the third bedroom face the entrance driveway and the bay; a story above ground level, they have complete privacy despite their relatively large glass areas.

Finishes were kept simple and easy to maintain. Walls are covered with vertical siding both outdoors and indoors. Ceilings are open joists, floors are asphalt tile. Foundation is cement block.

Louis Reens

Opposite page: living room floor is plastic tile; exterior siding is cypress. This page: top, all rooms on upper level have direct access to beach by stairs on one side, deck on other; top center, stairs from entrance driveway lead up to entrance hall with glass walls on both long sides for enjoyment of the double view; lower center, dining area is virtually a separate room although open to living room at one end; bottom, kitchen is readily accessible from all parts of house, has large pass-through to dining area and ample storage space, plus bay view

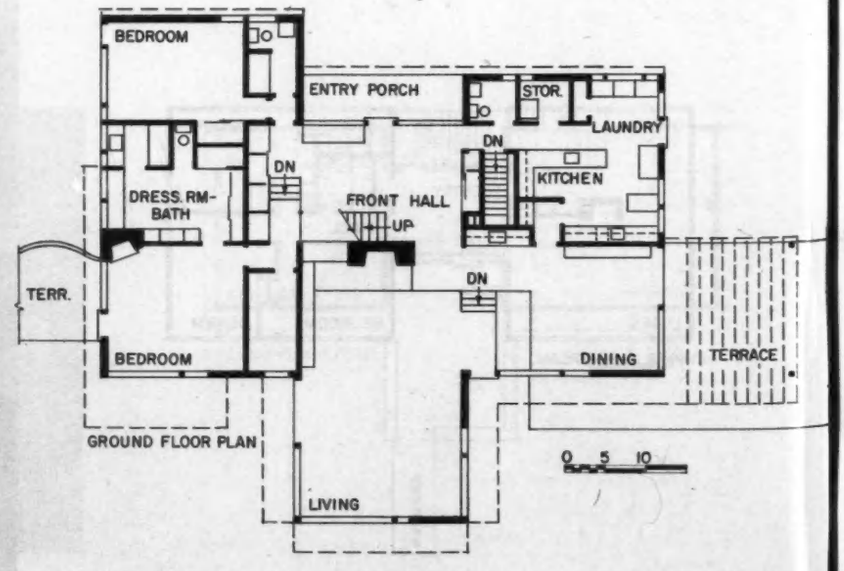


UPPER FLOOR PLAN

VACATION HOUSES

House for Mr. and Mrs. Thomas Estes, Oyster Harbor, Massachusetts

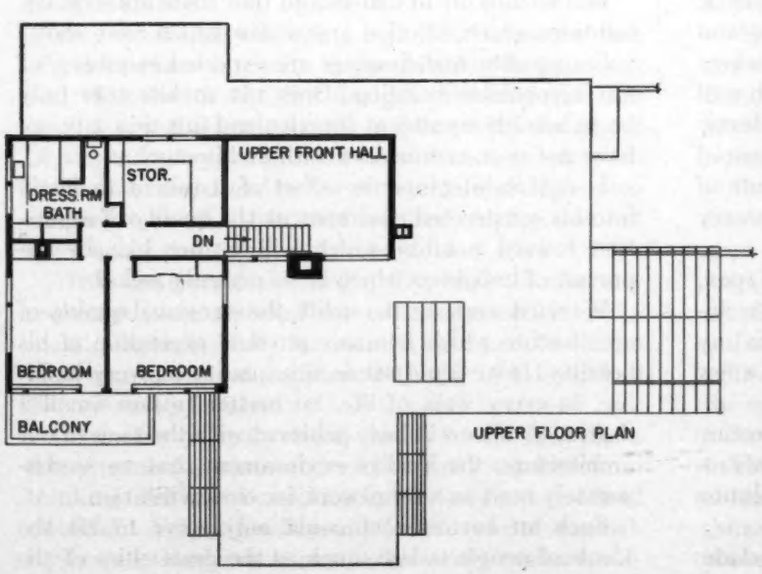
Carl Koch & Associates, Architects; Frederic L. Day, Jr., Associate



CAPE COD — particularly that part of it on which this house is situated — is a combination of sand dunes, ocean and beautiful lawns; the views usually are best toward the ocean but very pleasant in every direction. This house, on a waterfront site typical of its locale, was planned to take full advantage of all the varying aspects of the Cape. It is set well back from both water and road, with generous lawn areas on both sides; its living room projects outward toward the ocean, almost entirely walled in glass for enjoyment of the view; the main entrance is through a landscaped garden to an entrance hall which carries the landscaping into the interior; the second-floor bedrooms share a balcony overlooking the ocean, and the ground-floor master bedroom suite opens directly to the lawn and beach.

© Ezra Stoller

Foundation is poured concrete, framing is pine board and batten. Exterior walls are cavity brick, interior walls painted brick, unpainted plaster, or board and batten. Roof is rolled asphalt. Floors are covered in cork tile, linoleum or oak. Ceilings are plastered (some with acoustic plaster). Heating system is hot water floor-radiant, equipment is mostly electrical



UPPER FLOOR PLAN

By Minoru Yamasaki

TOWARD AN ARCHITECTURE FOR ENJOYMENT

THE STATE OF ARCHITECTURE today can be described as wonderful. We are in an ascending period, in possibly one of the most important and challenging eras of architectural history. Architects throughout history who similarly lived in the years leading to the culmination of an architectural era must have enjoyed the same kind of creative inspiration we have in the profession today.

Yet in the excitement and undue haste characteristic of such times, we find little opportunity to pause and take stock of what we have accomplished and where we do go from here. Though the necessity of such soul searching is significant to any creative effort, our hectic lives and the overpowering rush of our industrial economy generally force us to stay within the ruts of the more established patterns of our contemporary architectural thinking.

The opportunity to travel in Italy, India and Japan, experiencing for the first time their wonderful architectures of the past, gave me pause to review in my mind my architectural thinking and to crystallize a few thoughts about the future.

Before looking ahead at hopes for our architecture of tomorrow, it might be in order to review the present, since the future is largely dependent on our resolution of today's problems.

Some of the problems with which we struggle include: exaggerations of important and basic qualities of architecture such as function, economy, originality; the respect for the great men of our profession; and the respect for history. These exaggerations I will list as fallacies.

The *functional fallacy* is the overimportance placed on function, the natural reaction from the ignoring of function by our immediate predecessors.

Is it so difficult to understand that there are so many solutions which function and so few which have souls?

Commodity and firmness are expected requisites of any responsible building. Does not architecture only begin here? If we stop at function and function only, we have not even commenced with architecture.

Is not architecture the effort of mankind to instill into his constructed environment the quality of aspiration toward nobility which will inspire him in the pursuit of happiness which he so urgently seeks?

We must work for the uplift, the emotional quality of architecture which is man's physical expression of his nobility. If we could attain this quality in every building, in every walk of life, no matter to how small a degree, then we will have achieved with the tools of our architecture, the kind of environment that we so desperately need as a framework for our civilization.

Such an environment could only serve to lift the ideals of people today, much as the great cities of the

"Is it so difficult to understand that there are so many solutions which function and so few which have souls?"

Renaissance must have provided inspired backgrounds for their tremendously creative effort in the arts.

Another impediment to the growth of our architecture today is what I call the *economic fallacy*.

It is obvious that architects have the responsibility to work within the overall economic framework of society. But to use the excuse of economy as a crutch for bad or unimaginative architecture is a crime of irresponsibility.

We are all guilty of this crime. The excuse for lack of perseverance in design or for mistakes in judgment and direction is the low budget. Whether the low budget is in the funds for the building or in the degree of will and energy within ourselves is open to question.

The best wood and paper architecture of Japan was conclusive proof to me that spiritual quality was not irrevocably tied to precious materials.

With the struggle for originality, basic in any new movement, are concomitant misconceptions in judgment. Originality only for its own sake and limitation of design to new or experimental materials, I will call the *originality fallacy*.

Originality is marvelously heady stuff. It unlocks doors to new avenues and excitement in architectural thinking. Without it, architecture or any creative field would die. Yet, originality only for the sake of originality has blotched our horizon with many excesses.

And it's not only the extremists who err in this respect. All of us have made errors in judgment, following dictates of originality.

The responsibility of the architect can be said to be far greater than that of the painter or sculptor, simply because his judgment affects the labors of many others, while the painter or sculptor can destroy a canvas or a piece of sculpture without having wasted anyone's time but his own.

We have been guilty of restricting ourselves to the newer and experimental materials, and it has hurt us. But the elimination of materials simply because they have been used before gives us only a flat and uninteresting palette to paint our bright new world.

The fine environment toward which we work and hope must be fashioned with every good thought and every good material available. We must find new and old ways to use new materials, and new and old ways to use the old.

The uncertainty of where to go in architecture is sufficient to force many to retreat subconsciously to the seeming safety of established thought. This I call *fallacy of hero worship*.

The fate of the reactionary in architecture is quite obvious. It needs no discussion here. The hero worshipper needs more concern. In immaturity, he imagines himself in the top ranks of a crusade. He disdains the

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efforts of others outside his immediate realm, without realizing how mired he is himself in the rut of complete imitation.

Others, not counted in the elite circle, are working in possibly less glamorous circumstances, but with more sincerity and creativity.

We have too many little Wrights, little Mieses, little Corbus and little Buckies, who might well have become bigger Smiths and bigger Joneses and bigger Browns on their own. We can do nothing in imitation that Mies or Wright or Corbu could not do better.

Influence in architecture, or in any creative field, is important and necessary, but pure imitation can well be eliminated.

The modern schools of architecture established by Wright, Corbusier and Mies have undoubtedly played the vital roles in advancing contemporary architecture to the threshold of an era that promises true greatness. Of these, Mies and Corbusier have had by far the greatest direct effect on modern buildings. Most of our best examples in the past twenty years fall into the realm of influence of one school or the other. These masters, one reviving the philosophy of structural integrity in buildings, the other revealing to us the sculptural and plastic possibilities in modern materials, have been twin beacons which have helped guide us from the morass of cluttered thinking which was our inheritance from the previous architectural generation.

Yet as great as is the heritage that these two masters have given architecture, it can be seen that to remain permanently within the orbits set by their architectural thinking would be to stifle and restrict the future of architecture.

It may be that it is time now to look backward to look forward.

We seem to be emerging from our self-conscious era where everything old was to be ignored. Today we are again becoming aware that many past civilizations in their architecture reached emotional and spiritual heights which we in ours have yet to attain. An examination of the qualities of these historical architectures might well give us fresh insights into our architecture.

I will attempt to look backward then and recount the experience of my recent travels. On this trip through Europe and Asia, there were three architectures which made deep impressions on me, in Japan, in India and the Renaissance in Italy.

In Japan as in India the architecture is by no means all wonderful. The attendant ills of unplanned and overcrowded cities, confusions of people and automobiles, has hit Japan possibly worse than it has most Western countries. The war, the lack of importance of the individual, the high density of population and the general poverty combine to make Japanese cities

". . . to use the excuse of economy as a crutch for bad or unimaginative architecture is a crime of irresponsibility."

low on a theoretical list of pleasant communities.

Yet in the midst of this disorder can be found many cases of incredibly lovely architecture and gardens. The great heights to which the preindustrial culture of Japan reached is everywhere revealed in these buildings built in the Japanese tradition, ancient and new.

The modern architect in Japan, like ourselves, is desperately trying to find a vocabulary within today's materials which will permit him to approach the spiritual qualities of the architecture of his past, but thus far has met with little success.

His search may be more difficult than ours because of the economic instability of the country, but he has an advantage, too, in having this elegant architecture so close at hand.

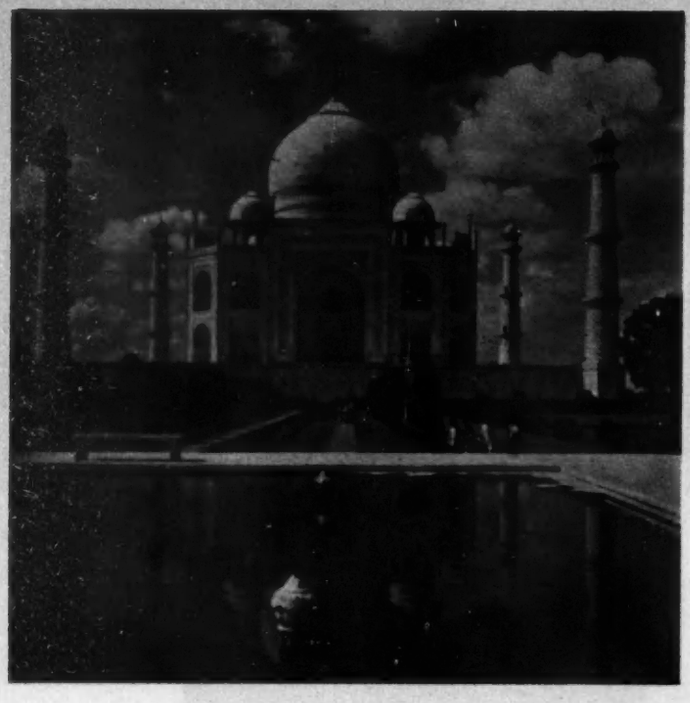
The regard for nature, the elegant detail and the understanding of material in this architecture has been the source of much inspiration.

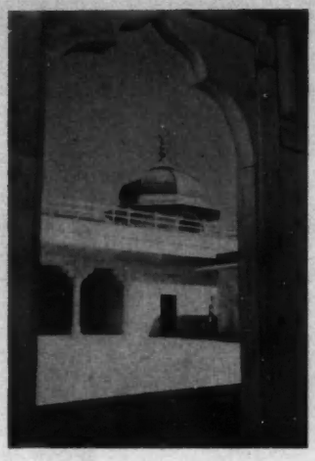
There are other qualities possibly more subtle but equally important. The element of surprise as used in Japanese architecture is a source of constant delight. It must have been in Japan that Wright learned the impact of surprise in architecture which he uses so masterfully in his buildings. The pleasure of surprise is found in many buildings, large and small.

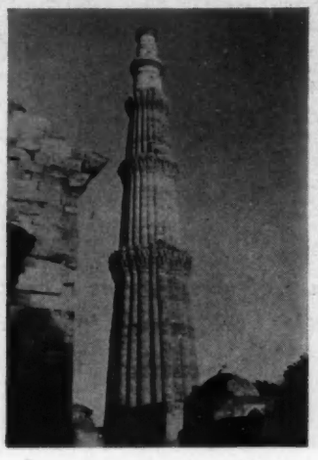
I remember vividly a visit to a traditional restaurant in Ginza, the principal shopping area of Tokyo. In the typically Japanese restaurant, each party is given a separate room. This room has the tatami or straw mats on the floor. The walls are plastered with a brownish Japanese plaster set between structural wooden posts which are polished to a lovely natural luster. The windows and doors are delicate wood and paper screens called shoji. In the center of the room is a table about fifteen inches high around which are placed cushions upon which the guests seat themselves. On one wall is the tokonoma, or the artistic focus of the room in which is placed, in careful composition, a Japanese hanging and an exquisite flower arrangement. Even the food is beautifully arranged and served in interesting dishes on lacquer trays. Altogether, the experience of dining in such a room is one of pure delight.

My first visit to one of these restaurants was to a particularly beautiful one. A Japanese architect friend and I entered a quiet graceful vestibule and were greeted by a charming lady. After we had removed our shoes and put on slippers, we were escorted up a stair into a superb room.

I spent my first moments breathtaken in admiration at the overall beauty of the room and the exquisite detail. After a time, my friend turned to open the shoji since it was a warm evening in late May and I had a momentary wish that he wouldn't since I thought that the usual city scheme of roofs, poles and crowded







"The silhouette of the white domes and minarets against the sparkling blue sky is a completely satisfying experience — an experience that we direly need to counter the boredom of our flat roof rectangular architecture."

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streets might spoil the quiet beauty of the room in which we sat.

To my surprise and pleasure, we looked down on a lovely garden about four feet wide with stones, moss and branches beautifully arranged.

The ability to achieve such visual pleasure in limited space was an entirely new and wonderful experience.

In the best of the larger scale traditional buildings in Japan, the use of visual surprise in architecture is carried to its ultimate heights. In some of the palaces and temples, the experience of surprise mixed with pleasure accumulates with a kind of rapturous disbelief that such happiness is possible from mere buildings.

To arrive from the bustle of the city into the quiet of the walled compound of the temple is a great relief. Then to remove your shoes and walk in stockinged feet through the hush of a beautiful temple building and to turn a corner and find an open court of white gravel all raked in careful pattern. The gasp of delighted surprise is soon replaced by a sense of utter inner peace.

Then after moments of a kind of meditation to wander through another temple to find another garden — this time just filled with lush and beautiful plants and trees, then to proceed and find another of moss and stones and water. This is a kind of architectural experience we know little about in our modern architecture.

The question of the emotional or spiritual quality of architecture in relation to scale had troubled me for some time. The feeling of uplift I generally associated with large scale structures.

I did not remember any small buildings from which I experienced the surge of feeling that comes from great architecture. My feelings of uplift had come from Mies' Lakeshore Apartments from the drive, the interiors of great hangars, the Johnson Wax factory, and in Europe the cathedrals. There were Wright's houses but even there it was in the lofty living areas.

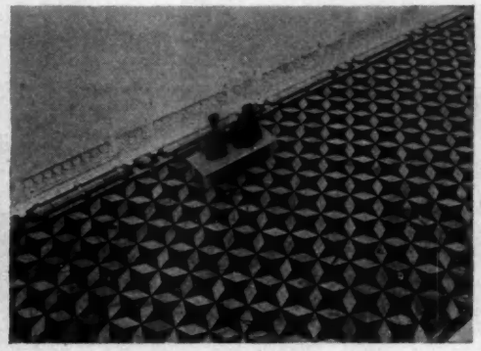
In Japan I found this feeling repeatedly in small scale structures. If the feeling was different, it was only that mixed in it was a little less awe and a little more peace.

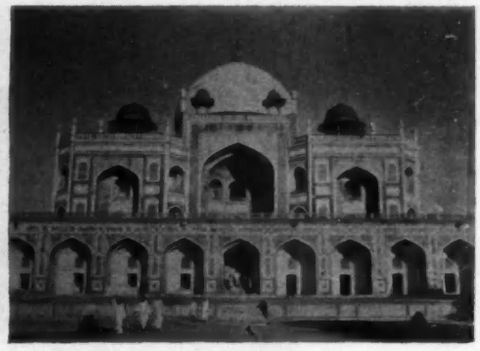
Another quality of Japanese architecture which impressed me was the submergence of the individual — or the architect. Nowhere was the stamp of the individual architect impressed on details or concept as it is so often in the best of our modern buildings. This abstract quality, I believe, exists also in the best of Greek architecture or even the Gothic.

I wondered if the signature of the architect, written boldly on buildings which are the effort of many, is not a kind of arrogance.

In India, I saw the Taj Mahal.

In the realm of proportion and the symphony of beautiful detail to perfect concept, I believe it is without





peer. A kind of sculpture, a building without utility, but as a monument, it is nevertheless pure joy to behold. Structural honesty, the lesson we hold so dear in modern architecture is ignored. The walls are fifteen feet thick. The inner dome and outer dome have no relation.

The Taj is in a completely controlled environment. The walls, the buildings and the river which surround it shut out all view of the city which is around it. Passing through the outer gate after leaving throngs in the hot and dusty streets of Agra and seeing the Taj standing before me in brilliant sunshine was a stunning sensation.

I sat for hours, wondering what could be changed. What could be added or removed, but I found nothing. The silhouette of the white domes and minarets against the sparkling blue sky is a completely satisfying experience — an experience that we direly need to counter the boredom of our flat roof rectangular architecture.

Throughout Delhi and Agra the sky was pierced by frequent minarets and domed buildings, making the horizon of the flat countryside infinitely more enjoyable. The steeples of the churches in New England serve much the same purpose.

Sometime ago in the suburbs outside of San Francisco I wondered why the same dreary builder's-house-and-telephone-pole-scape was not as offensive as some I have known in the Detroit area. Then I realized that the usual monotonous silhouette was lost in the strong dark contours of the hills in the background. This in contrast to the Detroit scene where every architectural misdemeanor is indelibly carved against the sky.

The skyline in New York is wonderful landscape, though completely unintentional and disordered. The natural scene is best with hills or mountains or trees or rocks against the sky. Our architecture, too, must ever learn new forms and new dimensions to give richness to our skyline.

Nervi in Italy and Candela in Mexico bring inspiring direction with their diversified shell structures. Eero Saarinen's fine new Lutheran college campus will bring new interest to the American architectural skyline.

So perhaps our architecture of the future will with purpose bring back the pleasure and drama of form against the sky.

The detail in Indian buildings, particularly in the Taj Mahal, is subtle and beautiful. The elegant inlays so enrich the walls and yet do nothing to obscure the simple strong form of the architecture.

In our architecture, too, some detail, carefully conceived and executed, could enhance our buildings. The simple strong forms of our architecture can gain richness in detail.

This I believed as I sat looking at the wonder of the Taj Mahal.

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So the discovery of the means of adornment without resorting to the type of handicraft used in ancient buildings becomes one of the significant problems of our age. That handicraft which so enhanced the buildings of the past is today nostalgia and we have little regret that it is so.

The unbelievable enrichment of the buildings, like the cathedrals and the Indian mosques, was accomplished with close to or actual slave labor. We have neither the time, the desire nor fortunately the political or economic conditions for such treatment of our buildings.

What the future will bring in the way of ornament, we can only guess. We have seen the sparkle that artists like Bertoia can add to buildings. We have seen lacy sculpture on the undersides of Nervi's great shells achieved by the expression of structure and the arrangement of formwork. Here again we experience the pleasure of shadow within shadow, much as in the subtle carvings in the great niches of the Taj.

The enrichment we bring to buildings must fit within the framework of our mechanized society. The detail we achieve must be both expression and fruit of our way of life. The task looks difficult but the genius and strength of our present day architecture will surely find a way.

Among my recollections of architectural wonder, I count the Renaissance City of Rome as one of the finest.

I walked through the narrow streets and open squares immersed with the thought of how wonderful they must have been during the height of the Renaissance. I was struck with the joyousness of the architecture, the great exuberance with which it was consummated.

The design of buildings, the color of stone, the play of water, the interpenetrating spaces — all were contrived to make Rome a happy and wonderful place to live.

The vigor and energy of the civilization that produced such heights in the arts were so well reflected in the buildings and cities, yet, in turn, these same surroundings must have provided the background against which the inspired creations of the Renaissance in literature and the arts were made possible.

Today we have a civilization which, in many respects, is far ahead of the Renaissance. Our scientific and mechanical achievements are beyond comparison with any age of the past. Yet in the building of our cities we are far behind those of the Renaissance. We have almost abandoned beauty in our scramble to be practical and to reap the ultimate in short-term profit.

The lesson that the people and architects of the Renaissance understood so well, our people and architects are just beginning to learn — that cities and

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buildings, the environment in which we spend the greatest part of our lives, play an integral and important part in the achivement of our dreams of a happy life.

Architects today so admire the Gothic, but is it not too true that in the finest Gothic cathedral, the end to be achieved was the building itself, a monument to God with no relation to a daily environment for people?

The structural qualities of Gothic architecture are marvelous almost beyond belief, but when we seek to translate the uplift or spiritual quality of Gothic cathedrals into our buildings of today we can only court confusion.

We need buildings which can be flooded with the joy of bright sunlight in which the impulse is to dance rather than be awed.

We need buildings which are warm with the security of beauty in clear light — buildings which we can touch and love.

This the people of Rome and Florence and Venice, during the Renaissance, understood so well as evidenced by the environment which they created. Walking down the streets of Venice, I heard so many people singing at the tops of their voices. The only music we hear as we walk our streets are the roars of trucks or hot rodders.

In the democratic atmosphere which we are so fortunate to enjoy, there is little room for the kind of emotions generated by these monumental qualities.

In the elementary school field, we are making our greatest strides in designing buildings as relaxed, friendly and enjoyable places, the very qualities of the democracy which we hold dear.

When factories, office structures and civic and public buildings begin to evidence these qualities then we shall be creating architecture which symbolizes our democracy.

In a universal environment such as this, our inclinations might be less toward fear and war and insecurity and more toward the advancing of the cultural aspects of man in which lie our greatest happiness.

So again I repeat, the state of architecture is wonderful.

In our dreams of the future, are buildings which will be symbolic of the democracy in which we so deeply believe. The enjoyment of buildings, the designs, will be enhanced by our never resting search for beauty. The buildings of the future will bring more variety to our surroundings through diversity of forms against the sky, through the excitement of surprise in architecture and the richness of well conceived and ever changing ornament.

For it is in the design of the community of well being that we will truly serve our peoples and with the fulfillment of these responsibilities take our rightful place.

NEW DORMITORIES AT CLEMSON COLLEGE

Site, structural system, budget and college customs determine design of dormitory quadrangle at Clemson, S. C.

CLEMSON'S NEW DORMITORIES, familiarly known as the "Barracks" and in use now since the fall of 1954, show in their design the positive influence of a number of easily identified factors. One is the site, which is restricted, was encumbered with inefficient old buildings (including some dormitories which it was cheaper to raze and replace than to remodel) and which drops off about 35 feet in its width.

Another factor was the necessity for speed; although some design preliminaries had been undertaken before the state appropriated construction funds (Clemson is a land-grant college), final design, working drawings and actual building all had to be compressed into less than two years. The architects determined upon lift-slab construction as the speediest construction system, with movable metal interior partitions, prefabricated

Architects: Lyles, Bissett, Carlisle & Wolff; G. H. Rowe, Structural Engineer; F. H. Franklin, Mechanical Engineer; Daniel Construction Co., General Contractors

Joseph W Molitor

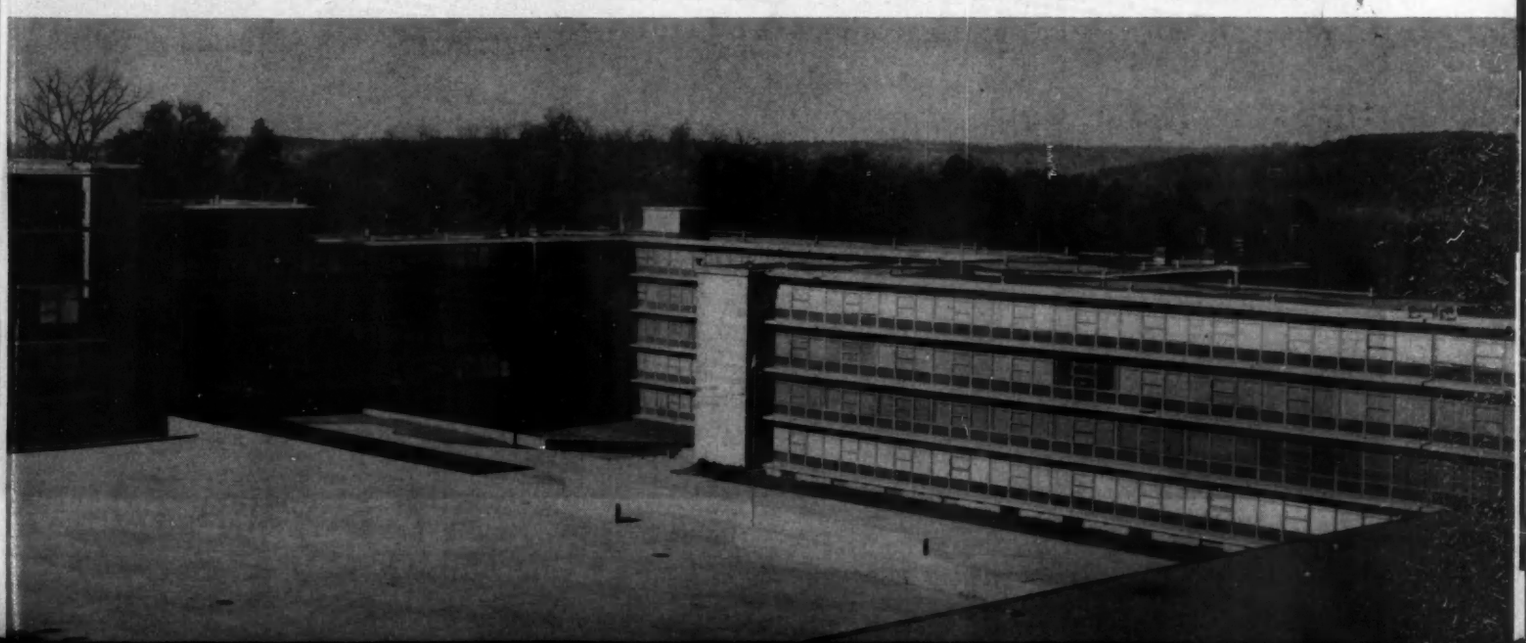
cabinet walls between pairs of dormitory rooms, and exterior walls of steel sash members filled partly with windows, partly with insulated metal panels.

These structural decisions also met the requirements of the very strict budget, although a few items had to be cut out of the final design. For instance, air conditioning for the large Mess Hall which was an essential part of the group could not be installed under the original contract. However, ductwork, space for equipment, etc., was installed for a future air conditioning plant.

Since Clemson is a military school, military formations and drills had to be provided for. Halls in the dormitories are wide enough for this, the plaza which the buildings surround is a parade ground, and the entries into it through many of the buildings are in effect sally ports, wide enough for formations to pass through.

At the same time the group could not have a forbidding, fortress-like look. Originally it had been hoped that no unit would have to be more than four stories high. The number of students to be accommodated — 2000, in double rooms — made five stories necessary at some points. Certain characteristics of lift-slab construction and the slope of the site were turned to advantage in this connection. A single lift-slab console (control unit) can handle a 12-column lift; two together can handle 24 columns, and this determined the size of units into which the group is divided. The units step down across the slope, following the contours, and are separated by fire stairs. The fact that some units are set back from the others lessened the need for lateral

In an irregular U-plan, buildings surround a 2-level plaza used for military formations



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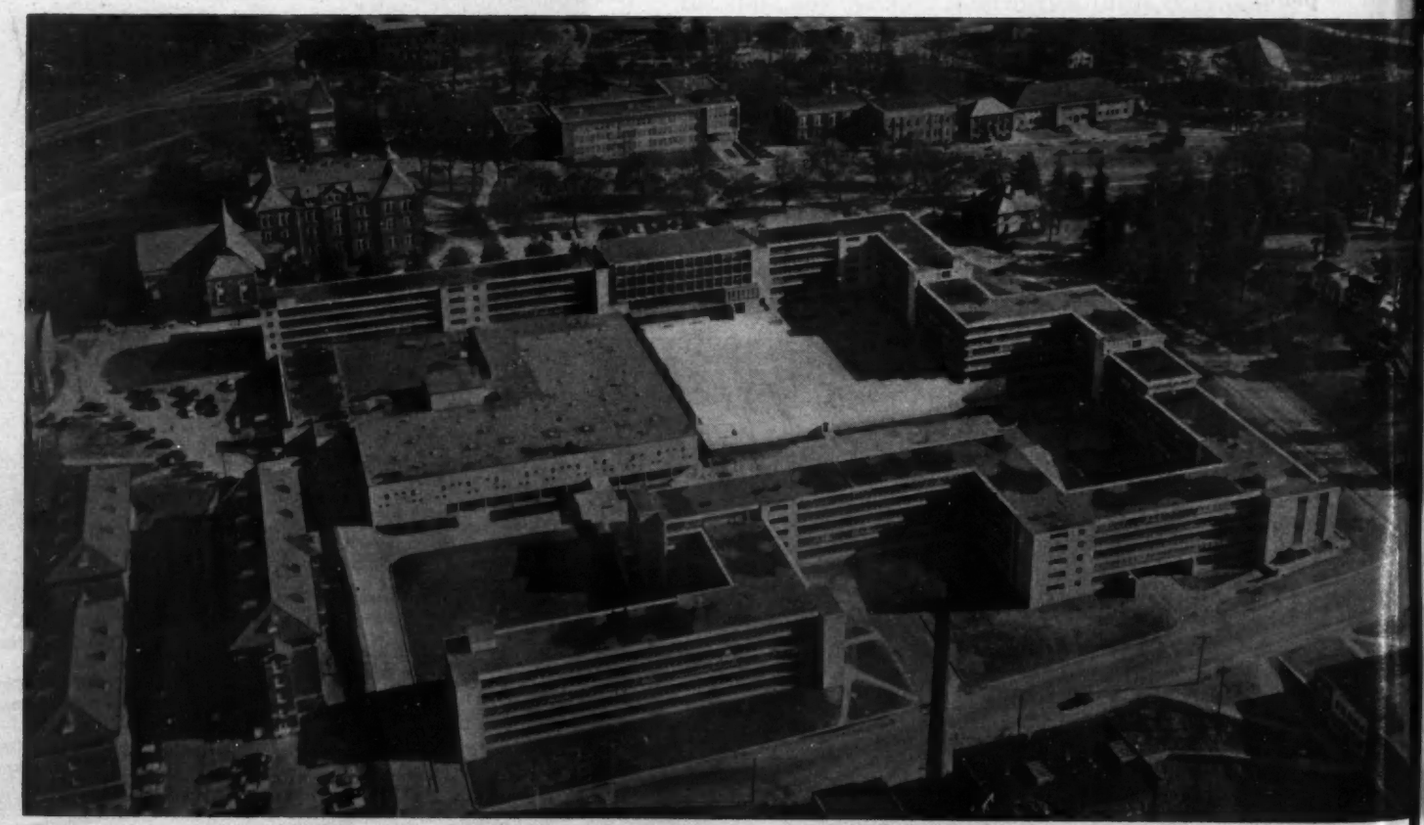
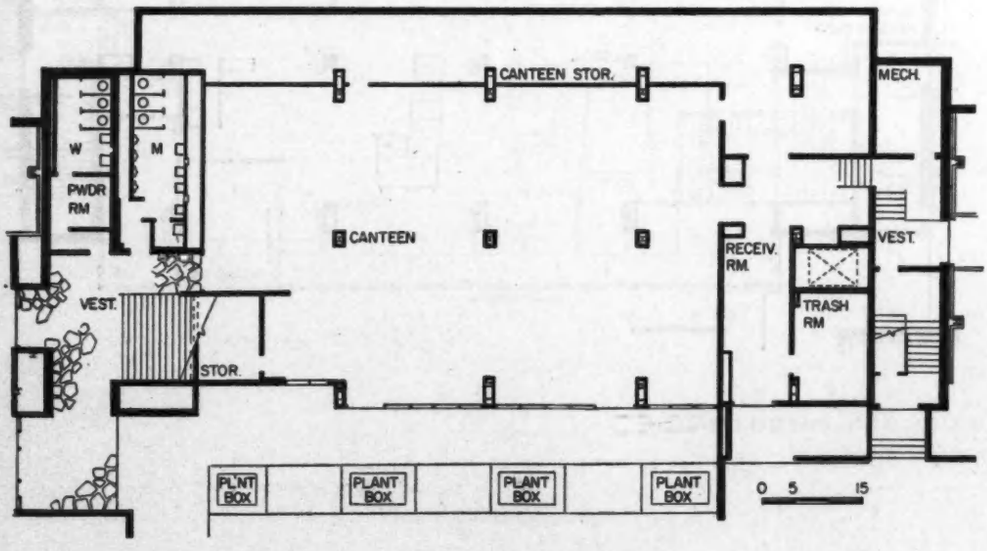
bracing, reduced expansion problems, and has kept the parts of the group in human scale.

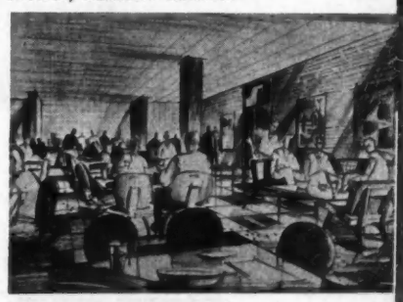
As one of the few five-story lift-slab jobs in the country, Clemson Barracks' construction posed some unusual problems. The columns, H-sections in bays 25 by 24 ft, would be too tall for their unbraced height if the top slab were lifted the full five stories at once. Instead, fourth and fifth floor slabs were lifted slightly above third floor level, on columns extending only that high, and were there anchored temporarily. Second and third floor slabs were then lifted and secured permanently, additional column sections were welded to the lower sections, and the top floor slabs were lifted to their final position



Central block in photo above is the College's Student Union; the low structure to its left is the Mess Hall, which can be reached without going outdoors — a necessity in inclement weather



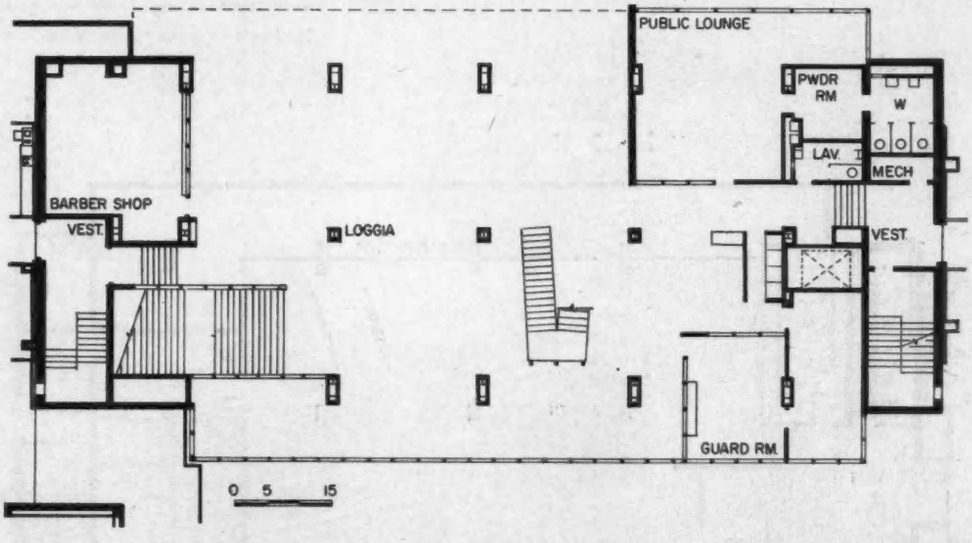
Below, canteen interior

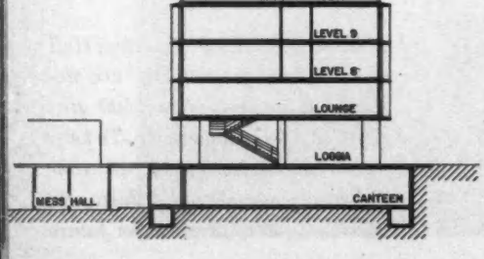


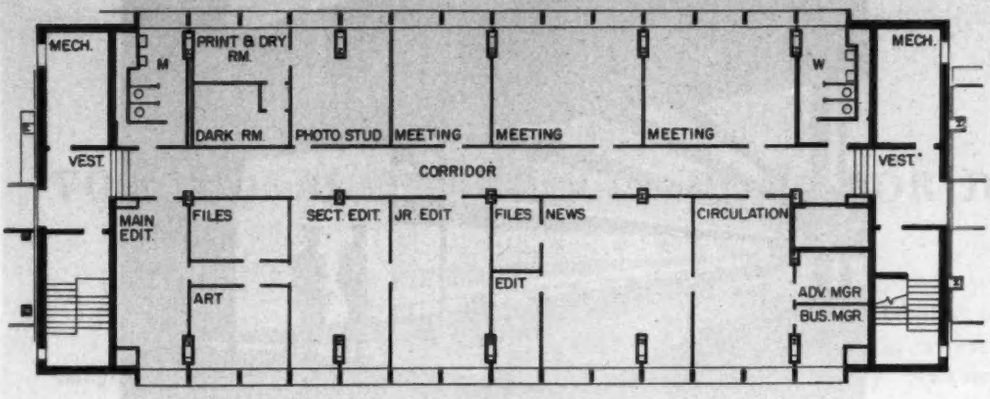
MESS HALL LEVEL: Mess Hall and its kitchen facilities are designed to accommodate 3500 students, and for banquets, etc. To keep within the strict budget, air conditioning was omitted but ductwork, space, etc., were provided for future

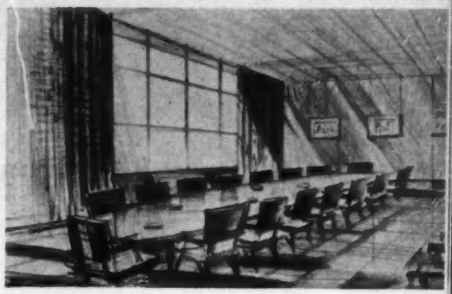
Joseph W. Molitor

Central block of the group, originally offices and meeting rooms, has actually developed into the Student Union shown on these two pages. Section below shows how grade changes were utilized to provide entrances at several levels

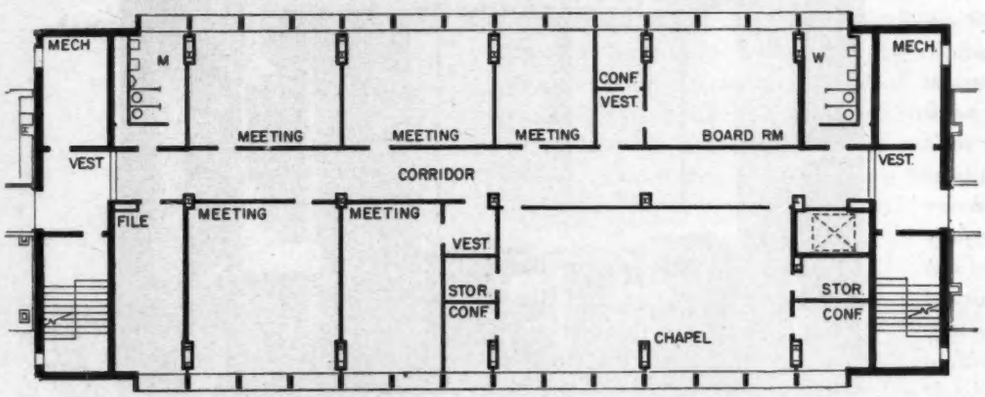




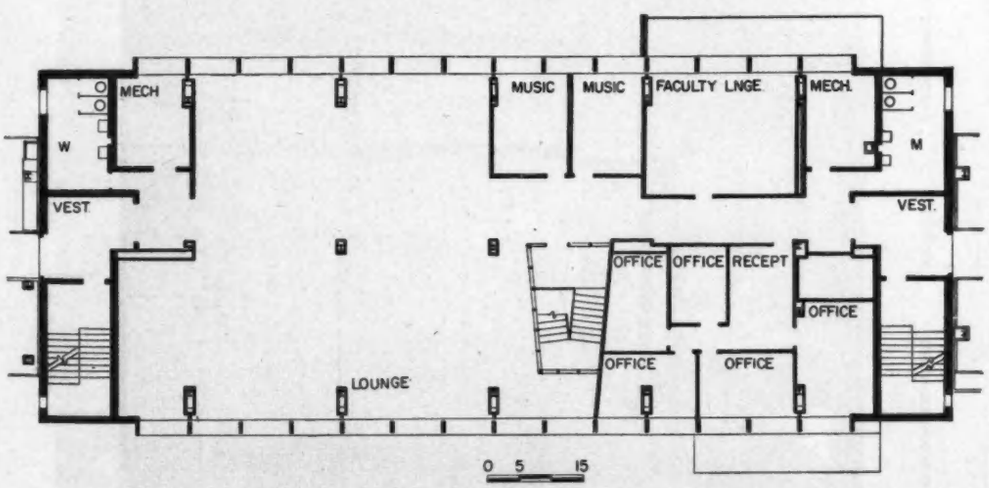




LEVEL 9: While there are nine floor levels in all, at no place is the building more than five stories. Above, sketch of a meeting room as originally designed



LEVEL 8: Religious as well as social activities are provided for in the Student Union, as the photograph of the Chapel Altar, above, indicates

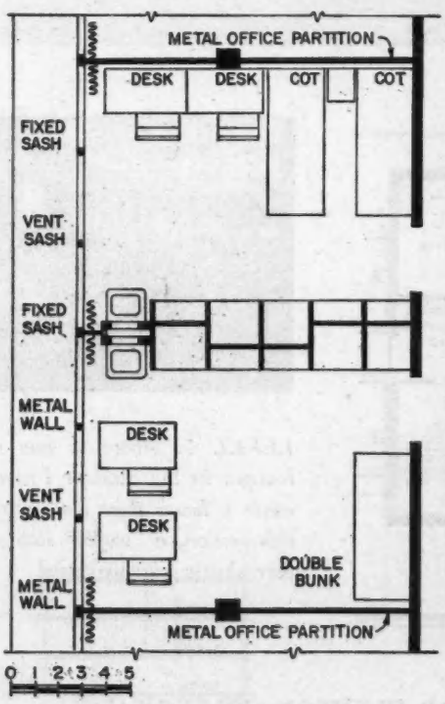


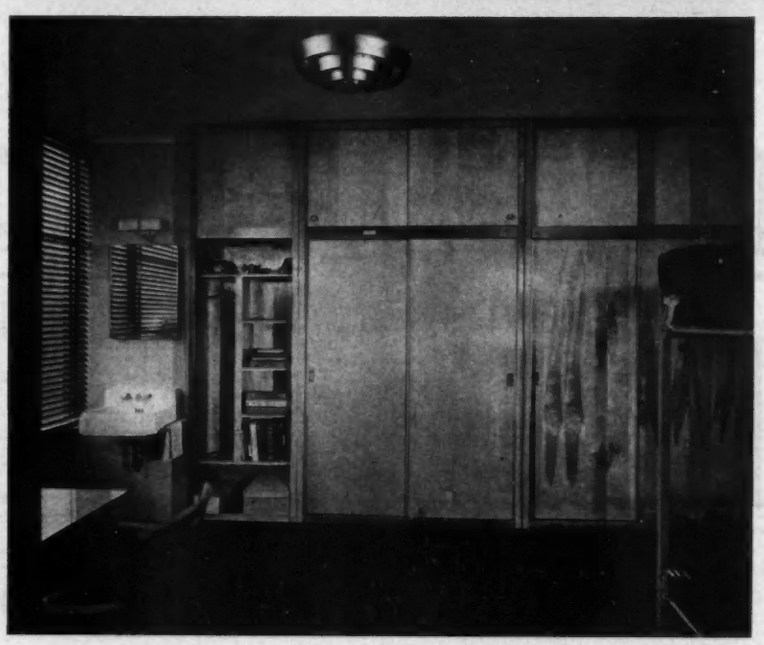
LEVEL 7: Above is one of the lounges in the Student Union. Because a heavy floor load existed in this section, a "waffle" slab poured over plastic pans was used

DORMITORIES FOR CLEMSON COLLEGE

CLEMSON DORMITORIES

The design module, a dormitory room for two men, was studied carefully, even to making full-scale mock-ups (see ARCHITECTURAL RECORD, *June 1953). Rooms 12 ft wide were chosen. Column bays 12 by 12 ft were at first thought most economical, but 24-by-25-ft bays meant larger slab units, etc., and so were used. Partitions between pairs of rooms were initially cinder block; however, for a job this size the higher material cost of movable metal partitions was more than offset by their lower installation costs. Closet partitions were only slightly modified as design progressed; plumbing chase was carefully located for least interference with flat slab reinforcing. Exterior walls are curtains of steel sash members filled with either windows or insulated metal panels, with a continuous heating element at sill height*





Joseph W. Molitor

VOCATIONAL TRAINING SCHOOL FOR DEAF STUDENTS

California School for the Deaf
Berkeley, Calif.

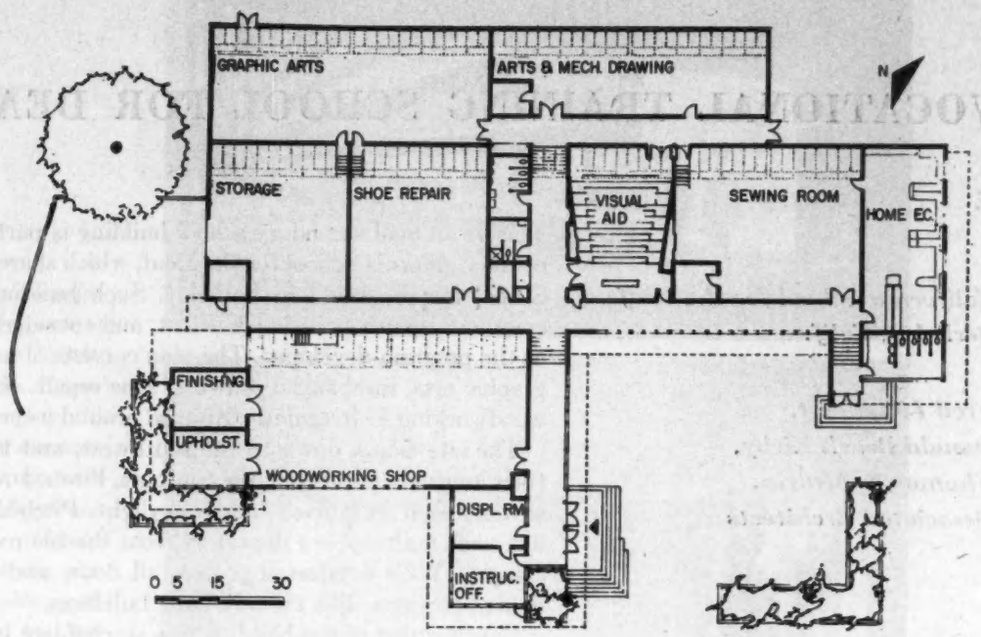
Fred Langhorst,
Donald Beach Kirby,
Thomas B. Mulvin,
Associated Architects

This vocational secondary school building is part of the expanding facilities of the California School for the Deaf, which shares a campus with the state's School for the Blind in Berkeley. Such buildings for deaf pupils are not common; there was little precedent, and considerable research was necessary as the program developed. The plan consists of a number of special shops — graphic arts, mechanical drawing, shoe repair, sewing, home economics and woodworking — irregularly grouped around a central visual aid theater.

The site slopes down to the southwest, and the shops are laid out with their long axes paralleling the contours. Pitched roofs are used over the shops so that each shop has a north skylight. Pitched roofs are metal surfaced, flat roofs built-up — a departure from the tile roofs of the remainder of the campus. Wide overhangs protect all doors and windows. The structure is poured concrete, like the adjoining buildings.

Construction of the building was started late in 1951; it was previewed in ARCHITECTURAL RECORD's Western Section for August, 1951.

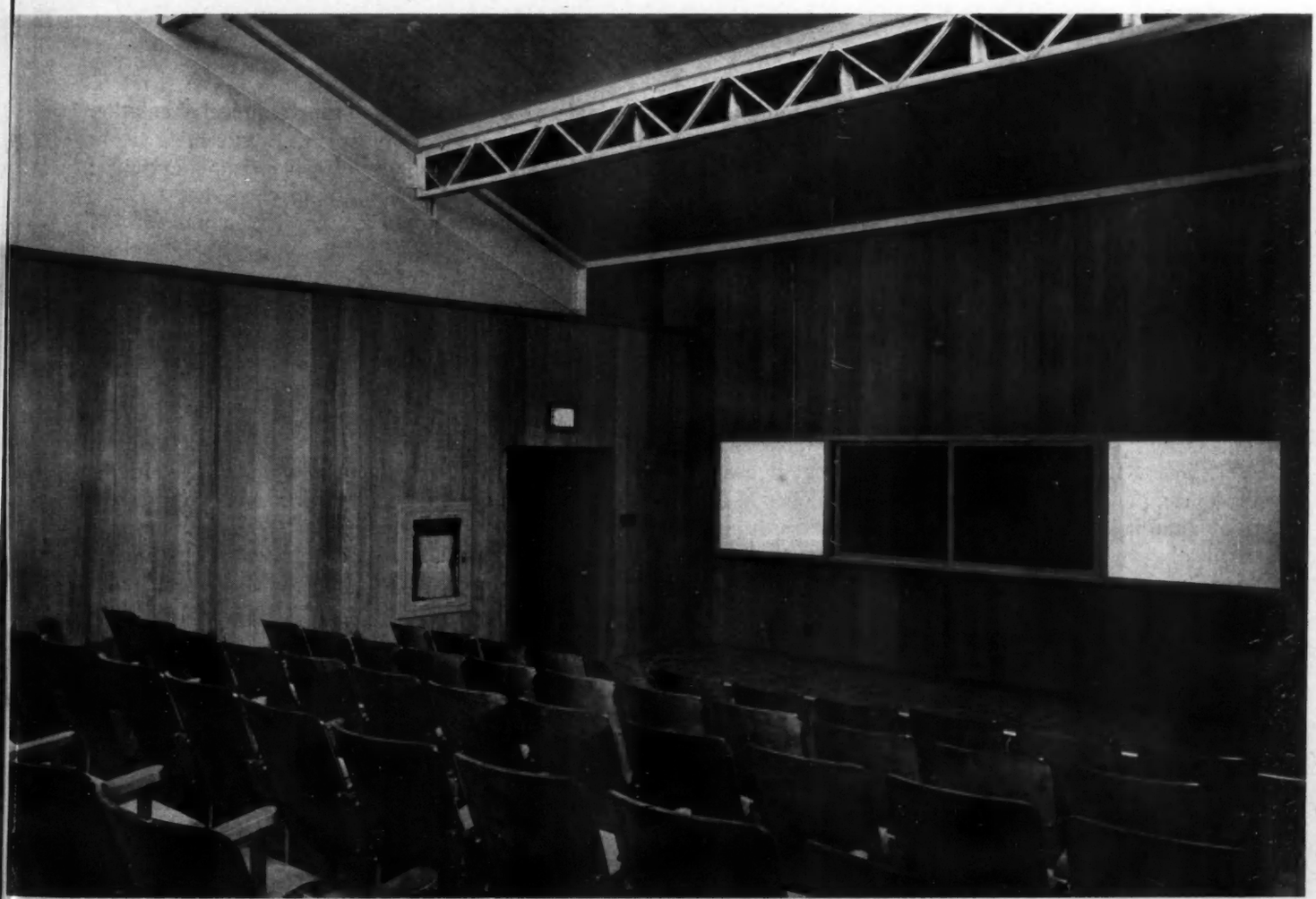
Pirkle Jones

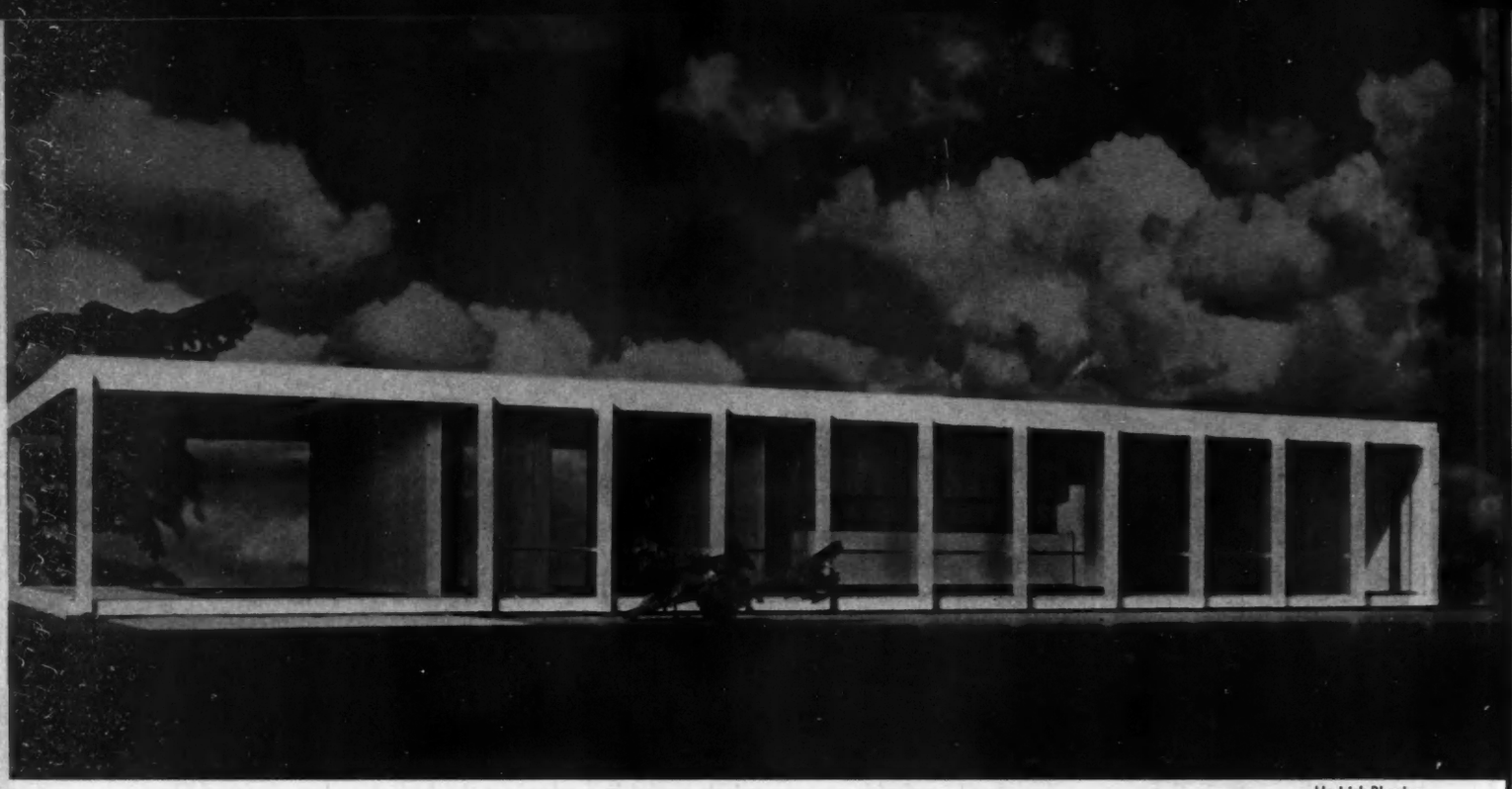


Below, Arts and Mechanical Drawing; bottom, Shoe Repair Shop; right, Visual Aid Theater

Pirkle Jones

Visual aids are particularly useful in a school for the deaf; this room, designed like a theater, has a skylight which can be darkened when a projector is used. Its walls are wood; most other rooms have plastered walls except in office and display areas where birch plywood is used. Floors are either asphalt tile or maple





Hedrich Blessing

MIES VAN DER ROHE DESIGNS A SMALL HOUSE

THE MAN who is in many eyes the most influential architect today has designed a standard house for American family living. The architect of the German Pavilion at Barcelona, the Tugendhat and Farnsworth Houses, the Chicago lakefront skyscraper apartments, and the Illinois Institute of Technology campus has proposed a 72 by 28 ft house in which his passion for glass and steel and masonry, and for simple shapes and the precise ordering of clearly expressed parts is everywhere evident.

The characteristics which for over 25 years have won international admiration and inspired both conscious and sub-conscious imitation are apparent in this house. It is a visually simple building; it uses a large sampling of the materials and techniques of our time; and it is rigorously methodical. In these respects it may be expected to appeal in great degree to the minds and in some degree to the senses of many of us. That the spatial organization of this house will make an equivalent appeal is at least debatable.

It is possible that the arrangement of this house, when measured in terms of the demands and habits of normal family living, may be for many something less than convenient. Provision for human circulation, storage, sound and sun control are at least open to question.

Particularly debatable are: the access from master to children's bedrooms; the through-kitchen circulation from one end of the house to the other; service access through what appears a crowded utility area entrance; storage of bicycles, sleds, baby carriage, trunks, outdoor furniture, lawn mower, garden equipment and the multitude of paraphernalia standard for American families today; direct entrance into the dining area with its view of the kitchen beyond; the control of sound from kitchen and work-play area to either end of the house; and the control of glare and solar heat.

The architect was questioned on these matters. In a cooperative but only partial explanation, a statement from his office pointed out that "the basic idea of this house is directed toward maximum flexibility in the use of space since family requirements vary over a period of time." The elimination of interior supports and the organization of a concentrated mechanical core were cited as permitting "the placing of walls at any point," since as requirements change these panels can be easily removed or relocated.

This kind of flexibility has long been sought, but in this house it does not appear to have been conspicuously achieved. Generally speaking, changing family requirements within any fixed volume involve at one time or another increasing the number of bedrooms or decreasing them. The discipline of the 5½ ft module used here makes such changes very difficult.

Within the ten bays of the model here illustrated there is possible some elimination of partitions, a little relocation and no addition. This kind of flexibility can hardly be said to distinguish this house from many others, and for many will hardly balance the loss of day-to-day convenience.

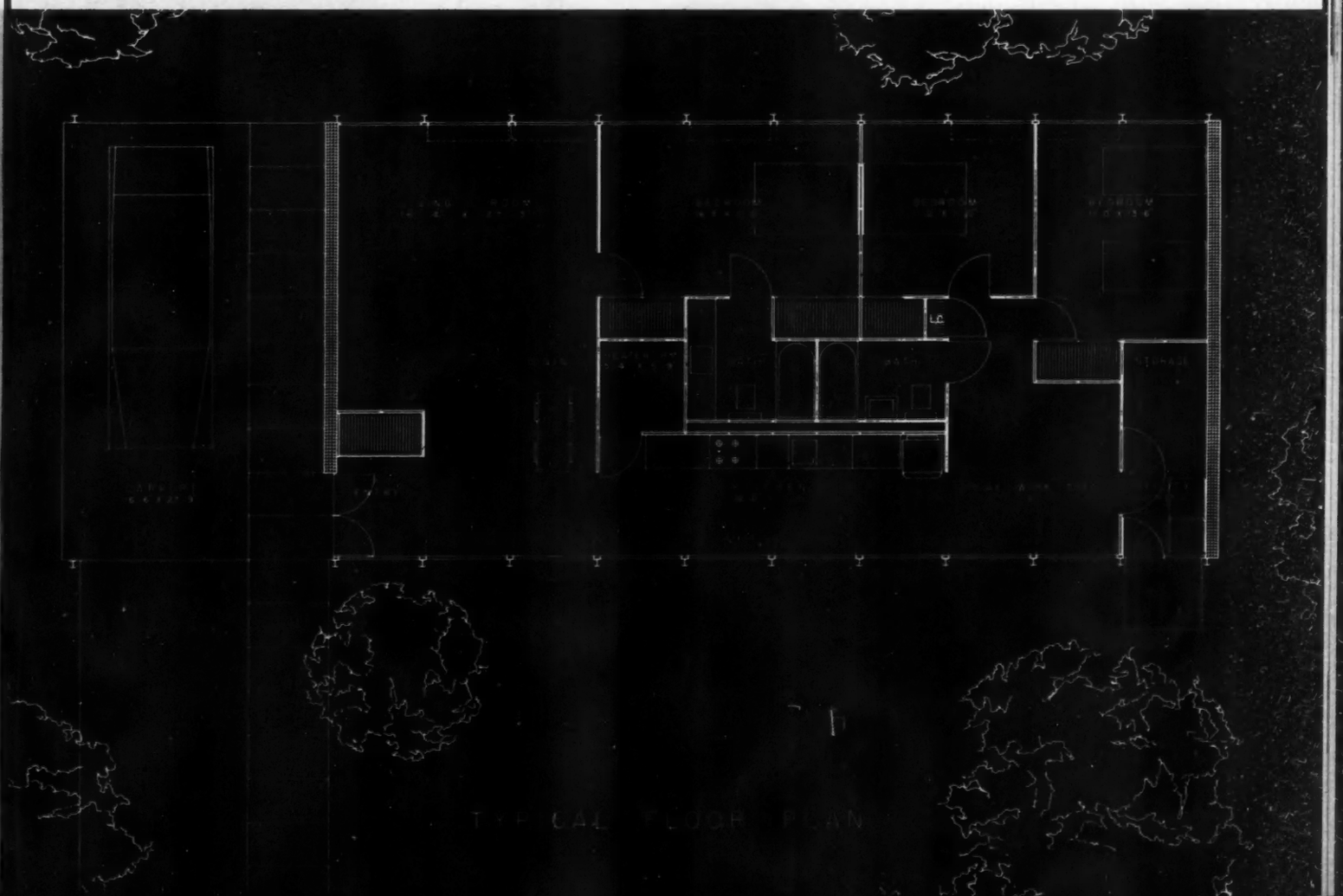
More fully achieved, perhaps, is the intention of a design in which as long an exterior wall as practicable of the 5½ ft panels could be shop fabricated, trucked to the site, set on the foundation and tied across to the opposite long wall. Some appreciable saving may be realized through this in the effort to sell this model for $35,000 including a 100 by 160 ft lot, air conditioning, curtains, range and refrigerator.

Based on a prototype dwelling built in 1952 in Elmhurst, Illinois for Robert H. McCormick, Jr., partner in the current promotion with Herbert S. Greenwald, this three-bedroom design will first be carried out in four houses near Elmhurst.

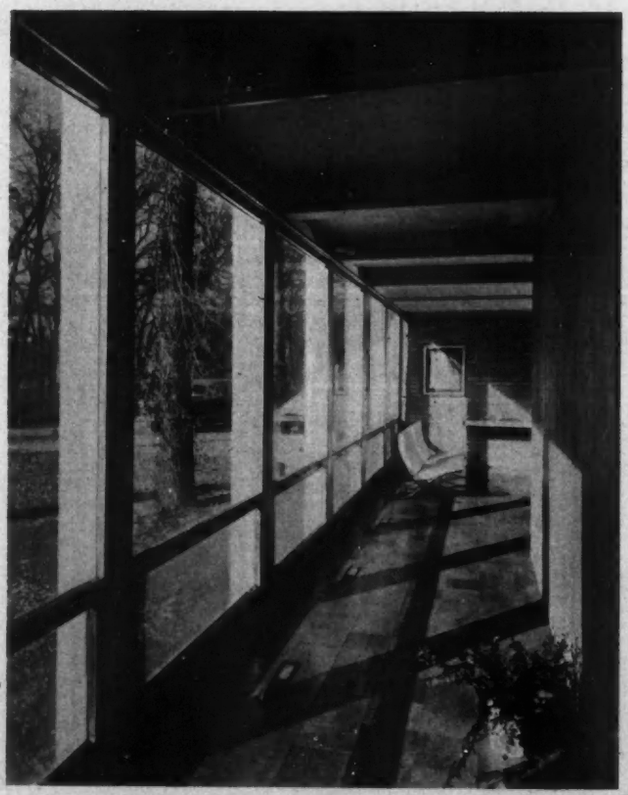
These units will serve as an introduction to a long-range development plan, with the same houses being offered for delivery on any site. Plans also call for similar houses in various sizes and price ranges.

Construction consists of reinforced concrete slab, 10 in. cavity walls of face brick inside and out, light steel columns and beams, built-up roof on a plywood deck with glass fiber insulation; asphalt tile floors; painted plywood ceiling; prefabricated interior wall panels in paint or plastic finish; steel sash, fixed above the horizontal mullion and operating hopper type below; ¼ in. polished, tinted plate glass; double exterior doors; plastic counter tops; heating and cooling by water circulated to individually controlled room units with fan and dehumidifier.

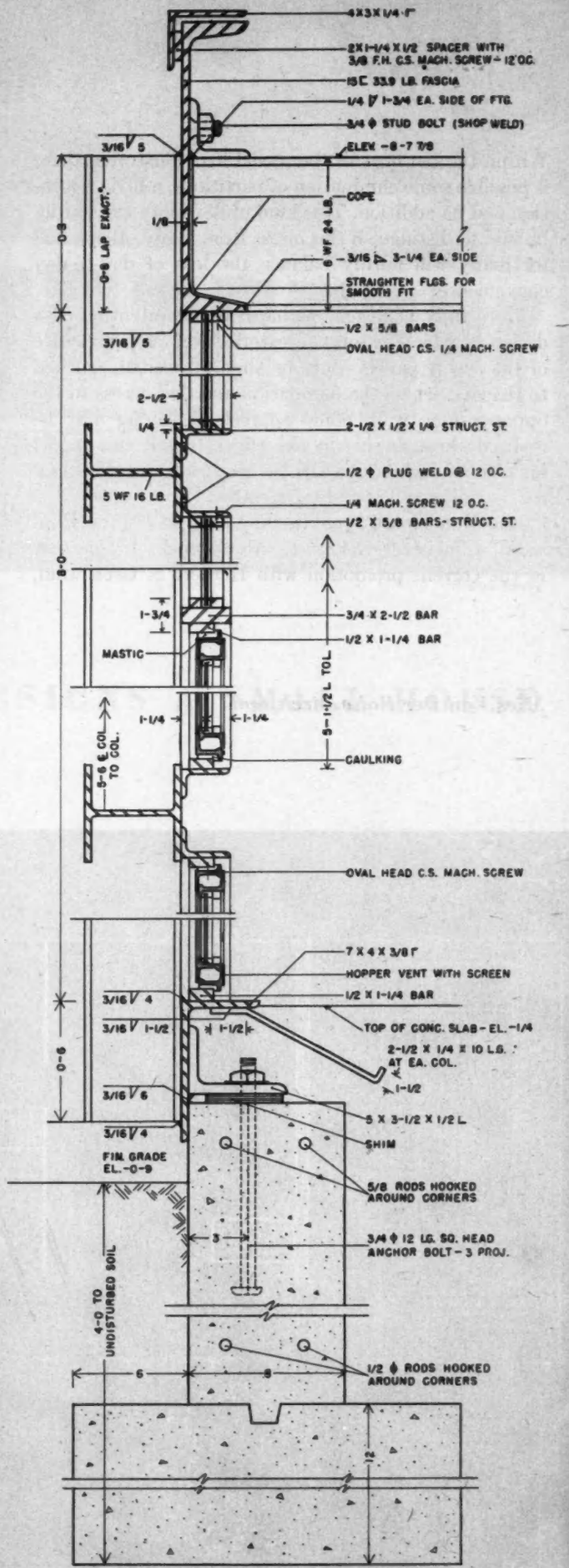
Mies Van Der Rohe, Architect



The views above and below are of a prototype house in Elmhurst, Illinois, built in 1952 for Robert H. McCormick, Jr., who, with partner Herbert S. Greenwald, is promoting the development



Hedrich Blessing



WALLACHS—*see next page*

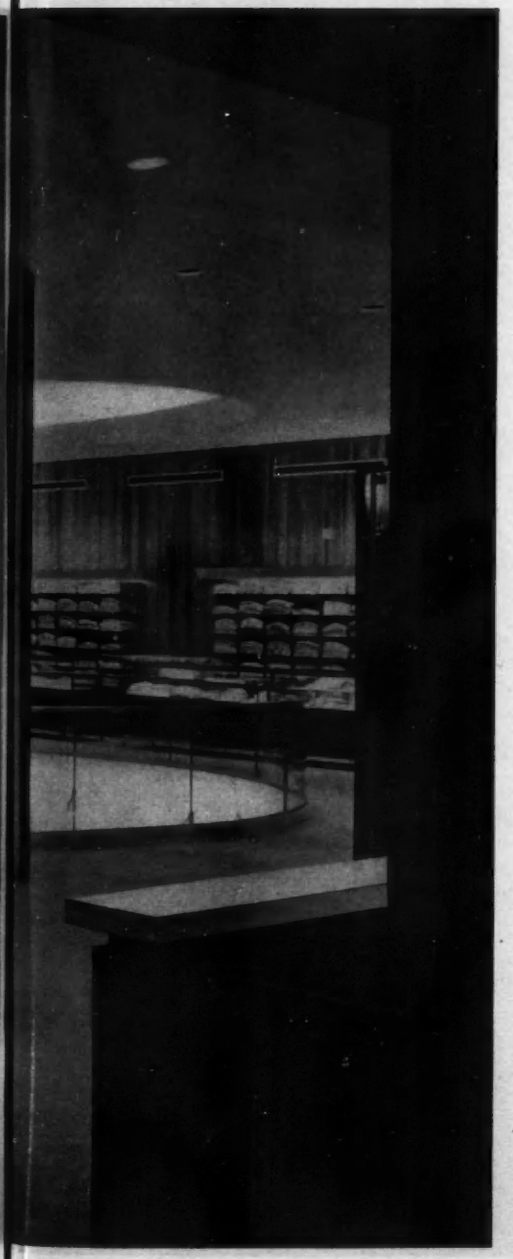
ON UPPER 5TH AVENUE, SOMETHING FOR THE MEN: THE

Ketchum, Giná & Sharp, Architects **Syska & Hennessy, Engineers** **Hinzmann & Waldmann,**

All photos, including p. 163, @ Ezra Stoller

NEW WALLACHS

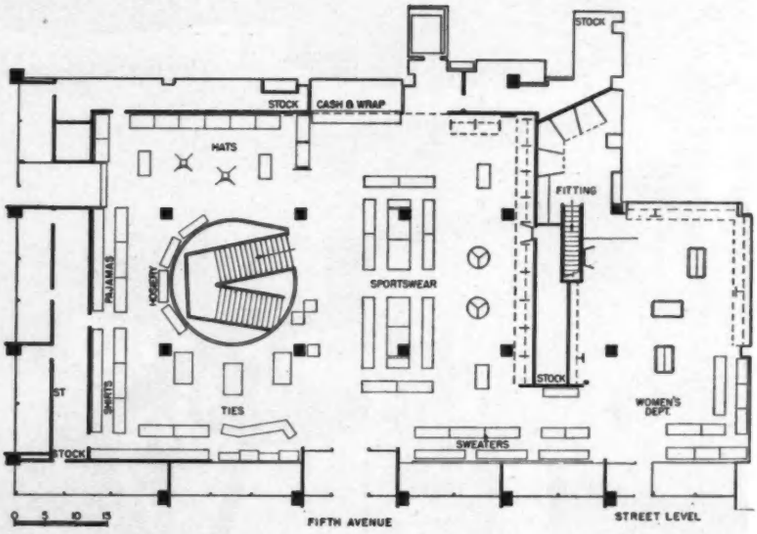
General & Fixture Contractors

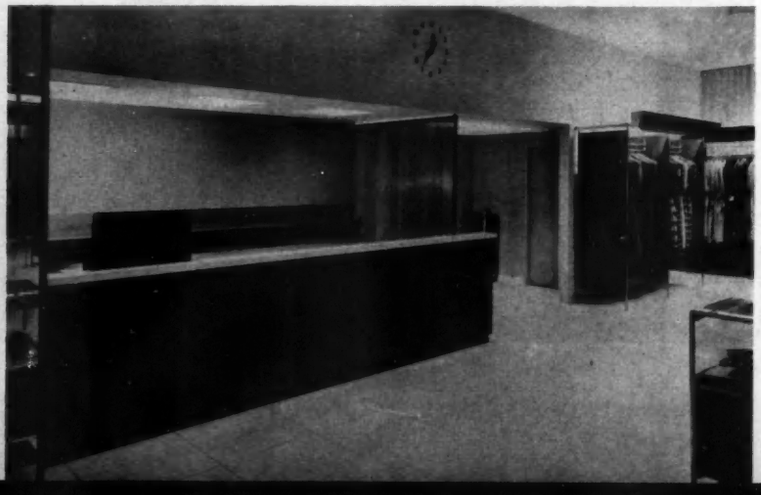


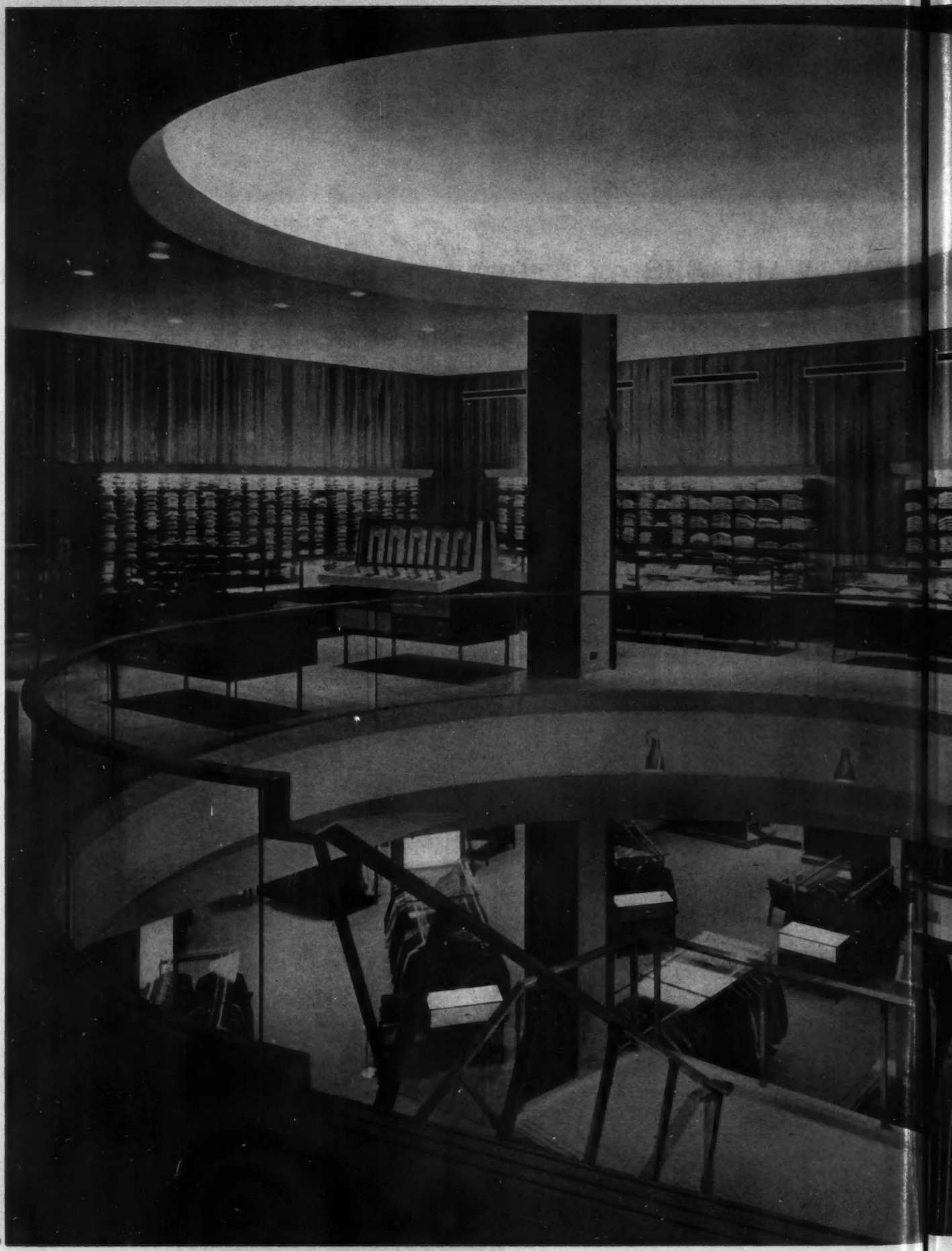
FOR THIS — the largest and most elegant of Wallachs eleven men's stores — several ideas guided the design. Their soundness has been demonstrated by large sales volume.

THE FRONT was made open by floor-to-ceiling glass and free-standing displays. After tramping over most of mid-town Manhattan to observe men's shops, Architect Frank Giná decided such a scheme (more common to women's stores) would be good business for Wallachs. The 125 ft spread — longest of any 5th Avenue men's store — creates an impressive effect, both by day and night.

COLOR is the big news in men's clothing; so why not make the merchandise the center of attraction, the store itself a neutral foil? This was done by using gray terrazzo, off-white painted plaster, and natural woods for floor, ceiling, walls, fixtures. The only color plane at street level lies behind the cashier's desk (bottom) where there is no merchandise display.







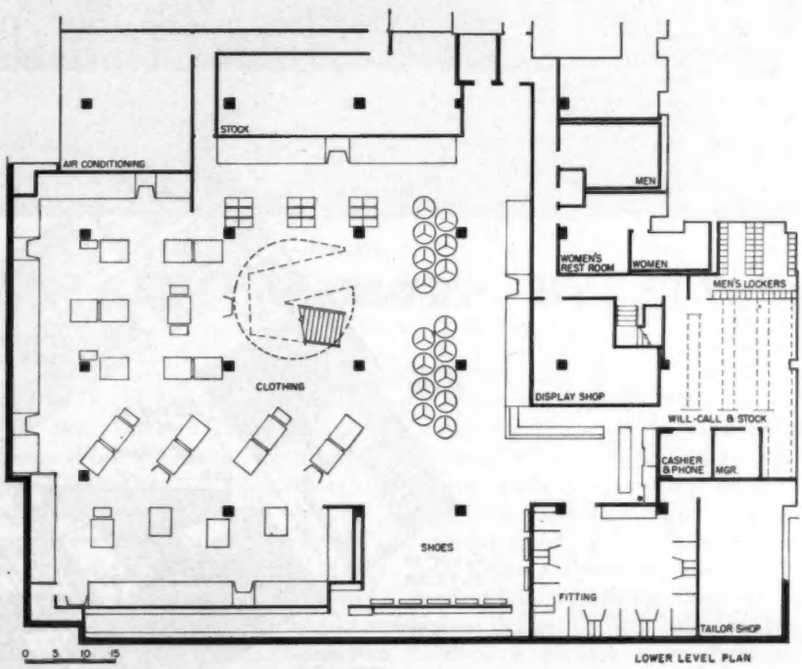
© Ezra Stoller

WALLACHS

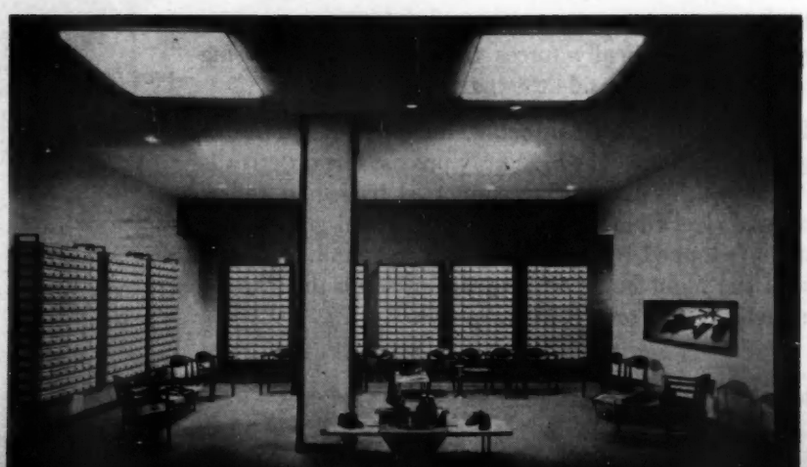
THE WAY SPACE IS HANDLED unites ground floor and lower level, thus removing from the latter the old-fashioned "basement" implication and making it first rate sales area. The interesting central stair, architectural feature, is designed to that end; the tying-together effect is furthered by the flat-domed lighting recess above.

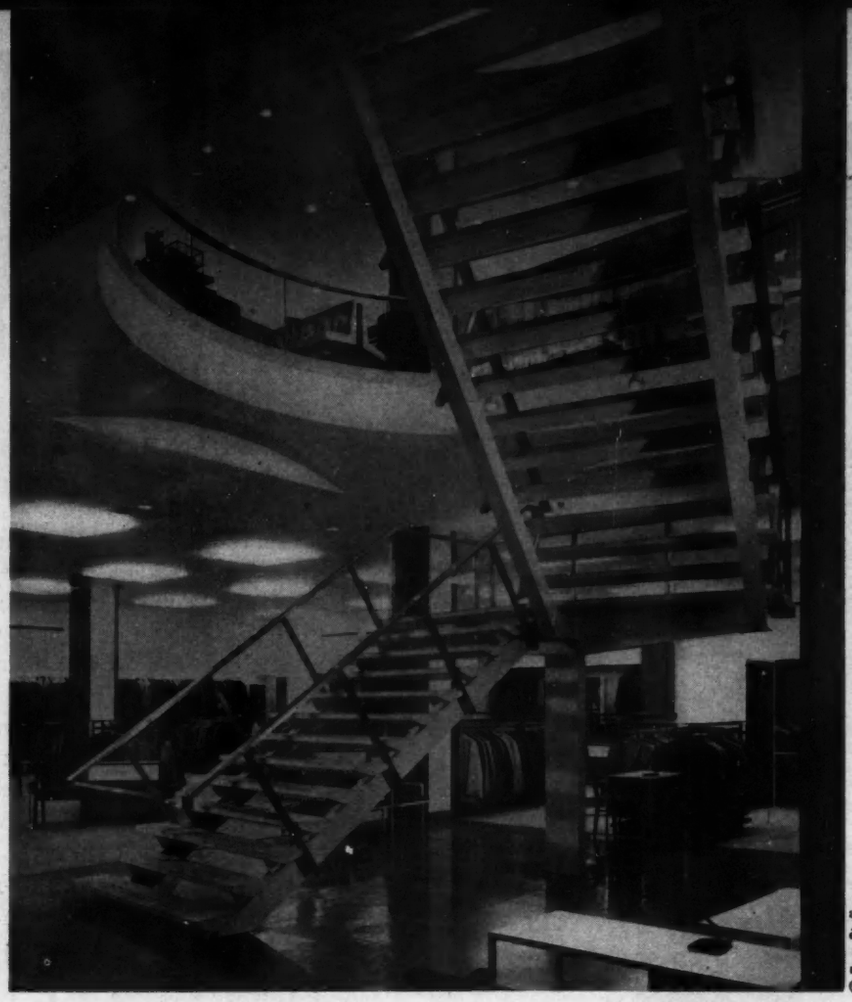
Visual unity stems also from the free arrangement of the low fixtures, which do not create directional aisles and which nowhere rise above eye level to block one's view of the entire area.

FIXTURES were designed to bring merchandise into the open, free for customer inspection — calculated to spark impulse sales. They are typically of plastic, glass, or natural wood, supported by slender metal frames. Similar frames, wall hung, decoratively serve as stock shelves in the lower level shoe department (bottom photo).



LOWER LEVEL PLAN





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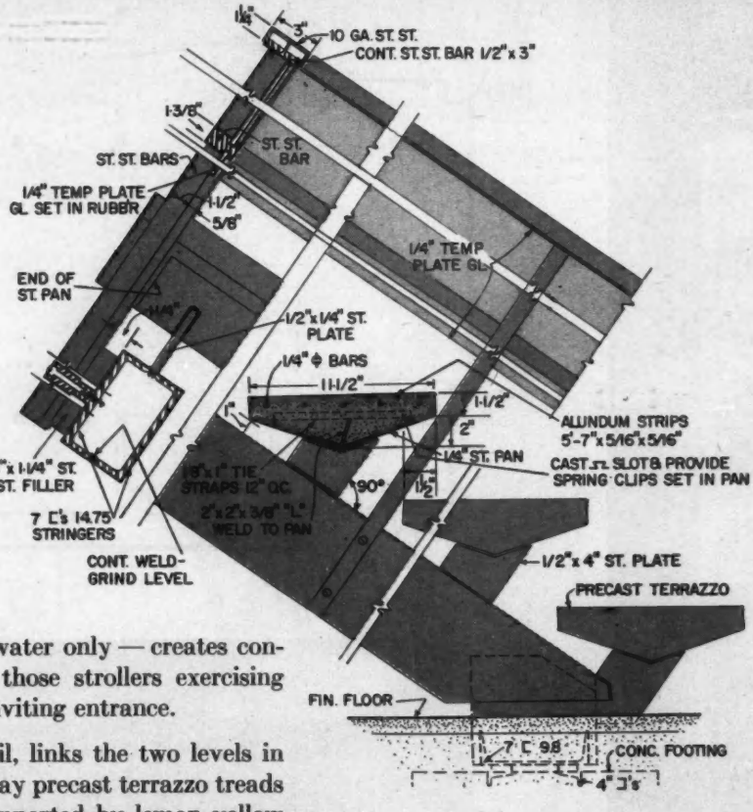

10 GA. ST. ST.
CONT. ST. ST. BAR 1/2" x 3"
ST. ST. BAR
ST. ST. BARS
1/4" TEMP PLATE GL. SET IN RUBBR
1/4" TEMP PLATE GL.
END OF ST. PAN
1/2" x 1/4" ST. PLATE
1/4" ⌀ BARS
11-1/2"
ALUNDUM STRIPS 5'-7" x 5/16" x 5/16"
CAST IN SLOT & PROVIDE SPRING CLIPS SET IN PAN
1/4" ST. PAN
1" x 1-1/4" ST. ST. FILLER
3/8" x 1" TIE STRAPS 12" O.C.
2" x 2" x 3/16" "L" WELD TO PAN
7 C's 14.75 STRINGERS
CONT. WELD-GRIND LEVEL
1/2" x 4" ST. PLATE
PRECAST TERRAZZO
FIN. FLOOR
7 C 9.8
CONC. FOOTING
4" I's

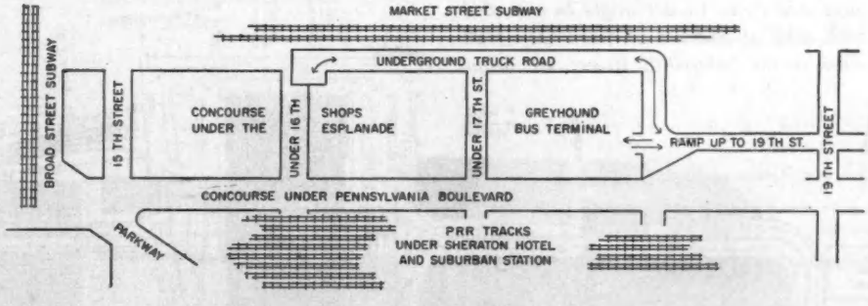
WALLACHS

THE DOG BAR—for city water only—creates conversation; practically forces those strollers exercising canines to pause beside the inviting entrance.

THE STAIR, shown in detail, links the two levels in sprightly fashion. The light gray precast terrazzo treads (with non-slip inserts) are supported by lemon yellow painted steel runners. The ¼ in. tempered glass balustrade is topped by a stainless steel handrail. At lower level the flight lands on a square of vinyl tile, the remainder of this area being carpeted.

PHILADELPHIA'S PENN CENTER GROWS BY STAGES

ON JULY 8, as ground was broken for Penn Center's Transportation Building (Vincent Kling, Architect), the most publicized of Philadelphia's redevelopment projects moved another step nearer completion. When Broad Street Station, the "Chinese Wall" that once surrounded the Pennsylvania Railroad's tracks, and many obsolescent structures on the multi-block site were razed in 1953, the first physically visible stage — demolition — was reached. In succession came construction of Uris Brothers' office building (Emery Roth & Sons, Architects), which is being occupied now; and the start of the Penn-Sheraton Hotel (Perry, Shaw & Hepburn, Kehoe & Deane, Architects). The Transportation Building, designed by Vincent Kling for McCloskey & Co., Builders, is perhaps more significant because concurrently with it a portion

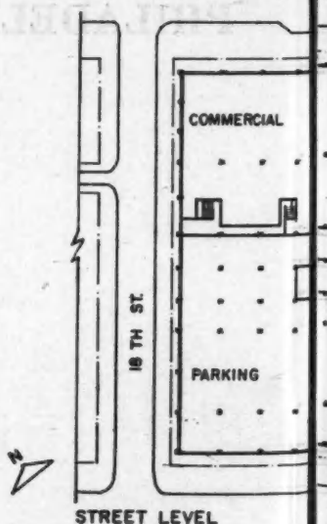


Schematic plan: trucks and buses enter from 19th St. to level beneath Penn Center

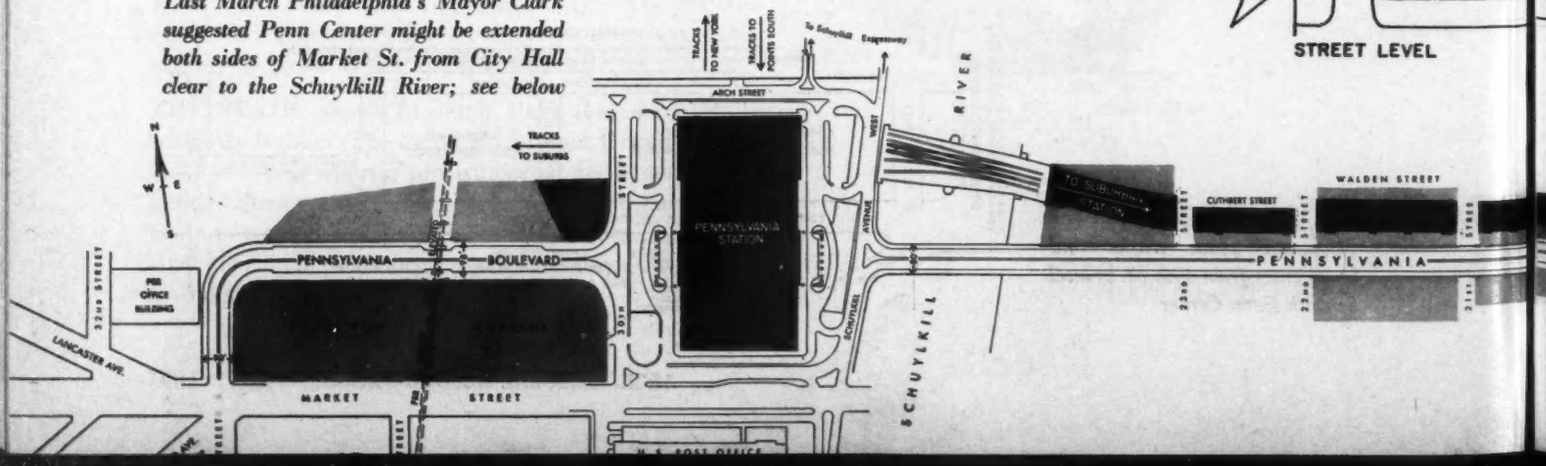
PENN CENTER TRANSPORTATION BUILDING

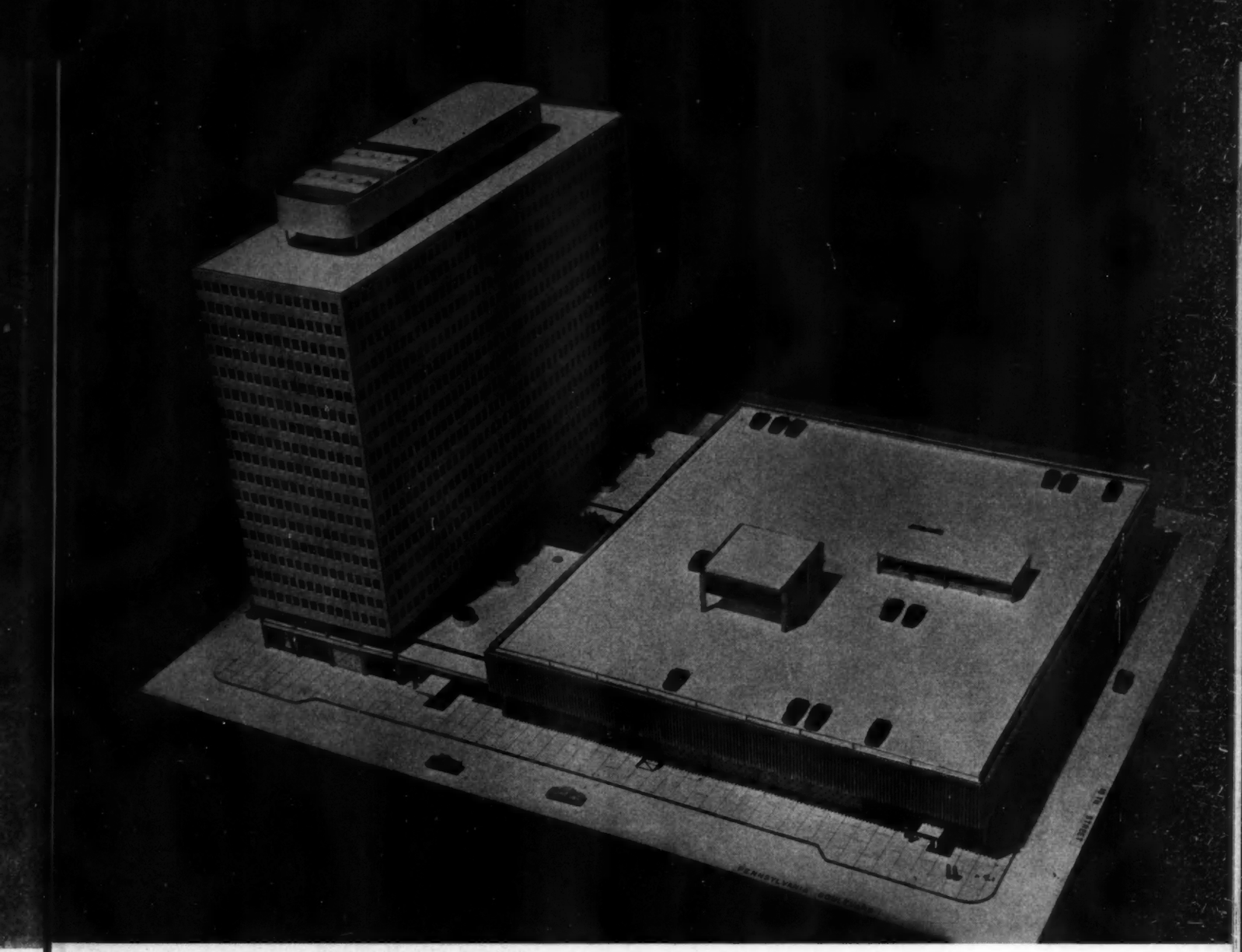
of the projected underground Concourse is being determined. How the Concourse develops, how open space is combined with commercial towers above, and how courts may be used to link, three-dimensionally, the street and Concourse levels are matters of serious concern to interested Philadelphians.

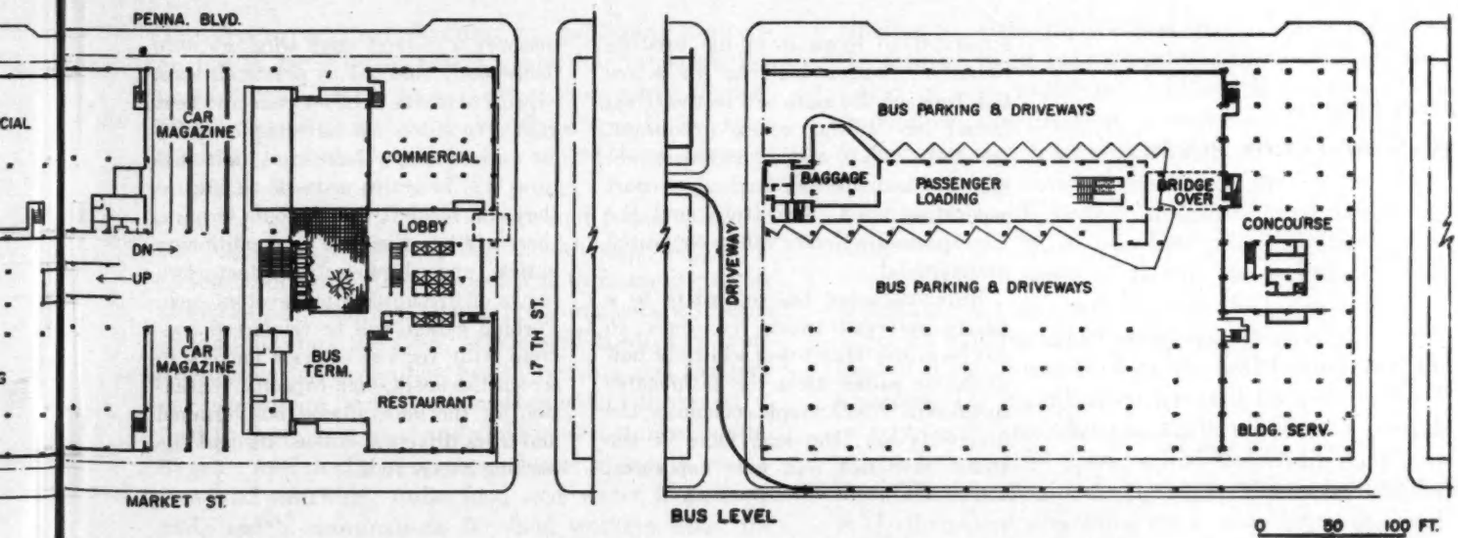
Buses and trucks enter the lower level by ramp from 19th St.; buses to saw-tooth loading docks in a terminal beneath the Transportation Building, trucks to a circumferential drive, from which they can service future Concourse shops and the entire Center. Above ground the Building is in two units: a 3-story, 1000-car parking garage (to be operated by the Penn-Sheraton Hotel) and an 18-story office building to which the Pennsylvania's general offices are

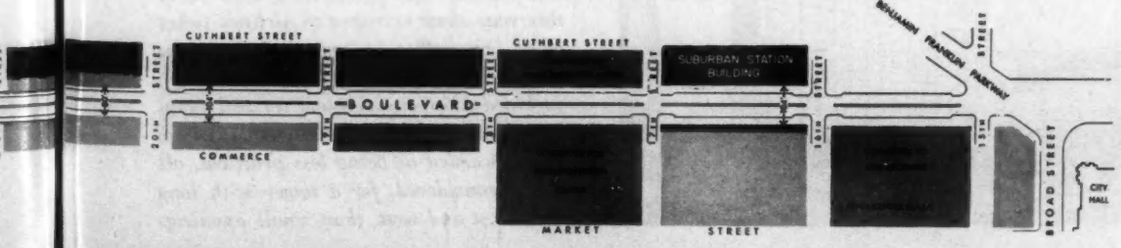


Last March Philadelphia's Mayor Clark suggested Penn Center might be extended both sides of Market St. from City Hall clear to the Schuylkill River; see below





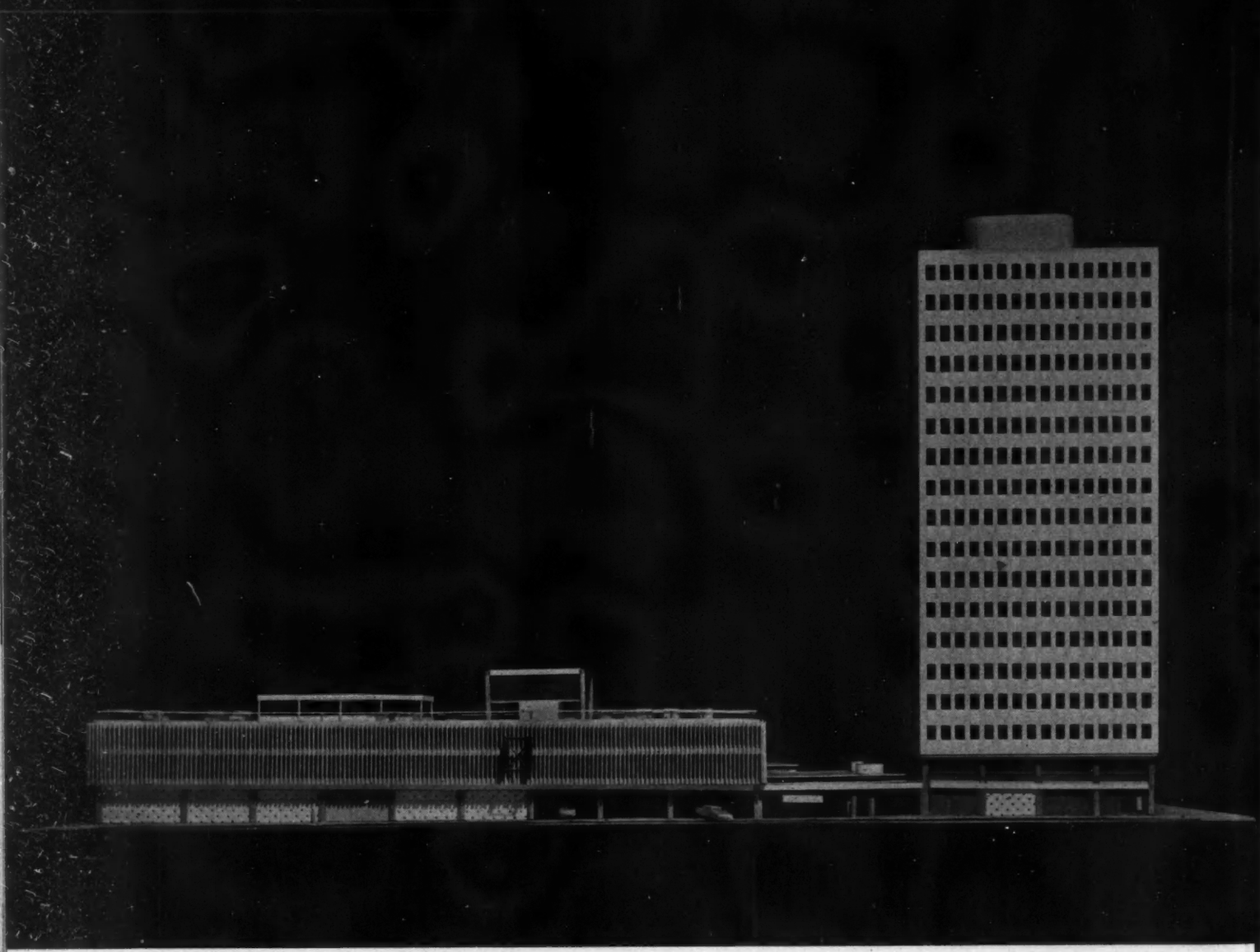




Property available for lease or sale—fee title.

Areas for which air rights only are available for lease or sale; subsurface rights reserved for railroad facilities.

Property committed for development.

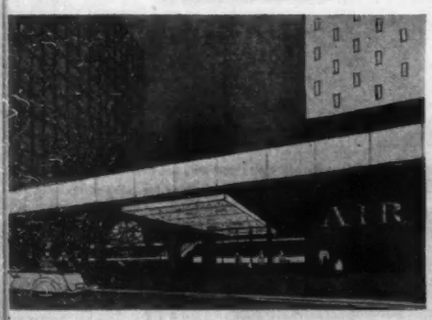


PENN CENTER

TRANSPORTATION BUILDING

scheduled to move from the existing Suburban Station building. In a low link between the units will be the Greyhound bus waiting room, restaurant, and ticket office, and an airlines ticket office, with an open-air landscaped court separating them. The Hotel and the Transportation Center will be connected underground.

Reversing what has seemed to be a nearly universal trend, the upper 16 stories of the office tower will be of buff limestone rather than the fashionable metal skin. Why? Simple economics, the architects say: the long faces of the tower have east and west exposures; masonry walls and small windows were deliberately selected as practical, least expensive means to offset glare and heat gain. The offices will have high-velocity air conditioning; fluorescent light fixtures will be set in acoustic ceilings so they can be shifted as layouts require; there will be adjustable air conditioning outlets, underfloor electrical ducts, two banks of five automatic elevators each. Parking garage will be reinforced concrete with vertical exterior louvers to screen the floors; high-capacity ventilation for the underground bus terminal and truck drive will exhaust through the parking garage roof.



Development of the design is apparent when sketches, left, are compared with model photo above. Sketches, done early this year show entrance to airlines ticket office, virtually unchanged in present scheme; and a concept of the tower which included strip windows and vertical members strongly emphasized — an idea which was discarded as being less practical, all things considered, for a tower with long sides east and west, than small openings

PUBLIC HEALTH CENTERS

TOWARD BETTER HEALTH FACILITIES

By Leonard A. Scheele
Surgeon General
Public Health Service

IN THE PERIOD since the end of World War II many local health units have been moved out of substandard and inadequate facilities into functionally designed modern Public Health Centers. The major share of the credit for this must be apportioned between the local health officer who sought and acquired facilities commensurate with the importance of his work and the architect who provided the design for the building that was needed.

The Public Health Service has viewed this transformation with interest and satisfaction. We have seen the impetus given to health facility construction provided by the Lanham Act during the years of World War II, extended by the Hospital Survey and Construction Act since then. As is well known, this Act provides financial aid for the construction of health facilities including public health centers. Every local health officer working in substandard quarters is encouraged to look into the possibility of obtaining aid through the designated State Agency for the construction of appropriate facilities in order to more adequately serve his community.

THE ROLE OF THE PUBLIC HEALTH CENTER

By John W. Cronin, Medical Director
Chief, Division of Hospital and Medical Facilities
Public Health Service

THE ARCHITECTURAL RECORD, by publishing material on health facilities in recent years, has made an important contribution to improving the quality of planning for hospitals and public health centers. In this issue it carries on with the publication of additional material on public health centers.

In the promotion, maintenance and conservation of the individual's health, public health centers provide facilities for preventive services and thus assume a role of first line importance. Health programs vary with each community but the basic services of control of communicable disease, public health nursing and sanitary engineering are fairly constant throughout the country. Add to these, maternal and child health clinics; mental hygiene and dental programs; classes of health education and nutrition; milk, food and water inspection; and, health examinations for food workers, then the tremendous contribution made by this phase of medicine becomes readily apparent.

To do this work, the health officer should have a building in which distractions due to shortcomings of the physical plant are reduced to a minimum. The provision of a well-planned building in which patient traffic flows effortlessly to properly sized and equipped examination and treatment areas is an obligation which the community owes to itself and its health officer. Appropriate and modern diagnostic and laboratory equipment as well as adequate administration space, are essential in order to permit the health officer to undertake his important duties in the public interest.

Such a building comes about only through the closest kind of collaboration between the health officer and the architect. The health officer has to determine the kinds of services he can offer and think ahead to a possible expansion of these services and the addition of new ones. These professional conclusions should be included in the document presenting the total program. A schedule of the clinic sessions also should be included. Sitting down with the architect, the health officer should discuss in minute detail the operation of the various clinics,

the space requirements for each and the nature of the equipment which will be used. The requirements of the administrative areas, record keeping, public health nursing activities, sanitary engineering, health education and all other activities that might be undertaken must be made plain to the architect. The result will be a building of which the community can be proud and one in which the health officer may effectively do the work required of him in maintaining the total health of the community.

HOUSING THE HEALTH DEPARTMENT

By Reginald M. Atwater, M.D., Dr. P.H.
Executive Secretary
American Public Health Association

IT WAS Victor Hugo who spoke of the power of an idea whose time has come. That power can readily be seen in the new construction of public health centers since an earlier edition of these studies in the ARCHITECTURAL RECORD in 1942. Twelve years ago it was possible to report that health center projects developed under the Hill-Burton federal program had been approved in 92 communities, involving a total estimated cost of almost 5 million dollars. By March 31, 1955, a total of 438 health centers and related facilities had been approved, representing an investment of not less than 358 million dollars. These health centers are part of related projects mostly for hospital construction, involving almost 2 billion dollars of building funds and an addition of more than 116,000 beds.

The coöperation represented by these achievements between health authorities and architects and other planners for the better community of the future is noteworthy. It is also unprecedented in the United States. For much too long the health department was usually the poorest housed municipal service and, even with this marked improvement, there remain at least 75 per cent of the health departments in the United States which ought to be rehoused.

It undoubtedly is true that many of these unsuitably housed local health departments have a narrow concept of their functions and duties. These departments frequently perform only the routine tasks of inspection, abatement of nuisances, and enforcement of quarantine along with some other activities that have been handed down from the early days of public health organization. On the other hand, and as another has said, when a modern health department is really concerned with the total health problem of the community, it is actually doing something about it — if it is operating clinics, maintaining nursing services, giving real protection with regard to water, milk and food, assisting in civilian defense and carrying on a health education program which reaches the people — then it certainly has a right to expect consideration from the community, and it usually gets it.

The United States has been fortunate in having a well staffed division in the United States Public Health Service, Department of Health, Education and Welfare, under the supervision of Dr. John W. Cronin and with the able assistance of the late Marshall Shaffer, for the study of hospital facilities. Utilizing medical and public health and architectural skills, this division has brought together the experience and imagination of the leaders to whom the public is largely indebted for the serviceable units now in operation. The projects approved for federal construction funds under the Hospital Survey Construction Program have been guided into more productive channels so that this federal assistance has rarely been used contrary to the public interest. Much credit is due to the Surgeon General of the Public Health Service, his associates and the Advisory Board.

It can fairly be said that the task of building public health centers (and what are called auxiliary health centers) has only begun. Of the public health centers, only 30 of the states have so far taken advantage of the opportunities afforded by the federal sharing, and in 15 of these states, fewer than 5 health centers have been approved. Among the 10 states and one territory which have built auxiliary health centers, in only 2 instances has the number of projects exceeded 40. The task is only well begun.

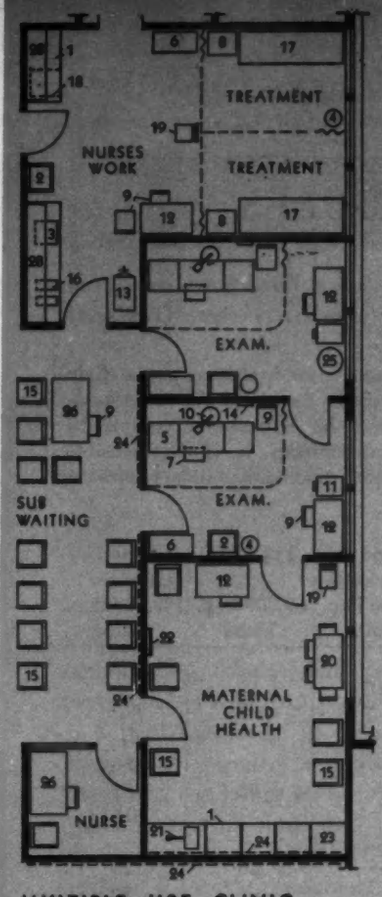
It certainly is in the public interest for those responsible for health department housing to recognize the current opportunities to rehouse this vital community service. The experience of the last decade reflected in these health center studies will give the planners and the architects full scope in developing facilities well adapted to the local needs. Especially to be commended are those communities which recognize the vital link between the health department and the dozens of voluntary health organizations, like visiting nurse associations, which can operate most effectively when they are housed conveniently to the health department, to the laboratory and to the services provided by the modern health center and hospital to make diagnosis and prevention much more precise. Here indeed is an idea whose time has come. The next decade should see new construction in this area at least three times that of the ten years just passed.

ELEMENTS

Plans of Principal Departments of the Type B Public Health Center, with Equipment Indications

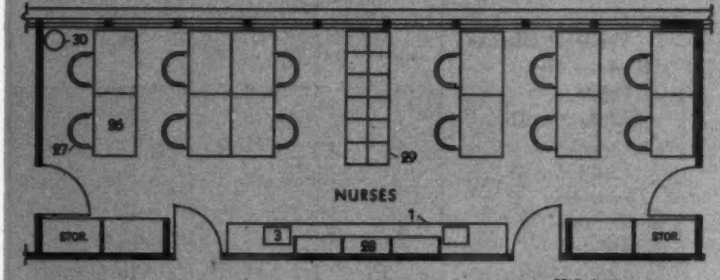
EQUIPMENT LEGEND

1. Work counter with cabinets below
2. Lavatory with gooseneck spout and knee or elbow control
3. Sink with gooseneck spout and knee or elbow control
4. Sanitary waste receptacle
5. Examination table
6. Instrument cabinet
7. Operator's footstool
8. Instrument table
9. Straight chair
10. Gooseneck examination light
11. Mayo table
12. Nurses' flat top desk, 20″ x 36″
13. Pressure sterilizer on stand, 12″ x 20″
14. Hook strip
15. Armchair
16. Microscopes, 1 ordinary and 1 dark field
17. Treatment table
18. Refrigerator, under counter
19. Clinical scale
20. Children's table and chairs
21. Infant scale
22. Pamphlet rack
23. Baby dressing bins
24. Educational display
25. Laundry hamper
26. Single pedestal desk
27. Executive chair
28. Wall cabinet
29. Clothes locker, 15″ x 15″ x 60″
30. Wastepaper receptacle
31. Filing cabinet, letter size, 4 drawer
32. Film filing cabinet, 3 drawer
33. Control unit
34. Film storage bin
35. Developing tank, with thermostatic mixing valve
36. Film loading counter, 36″ high, cabinets, cassette bins and film storage bins below
37. Wall hung film drier, water cooler below
38. Towel bar
39. Safe light
40. Timer
41. Mirror
42. Executive type desk
43. Combination radiographic, fluoroscopic unit
44. Cassette changer
45. Lead lining (size and extent varies)
46. Leaded glass view window
47. X-ray film illuminator
48. Lightproof shade



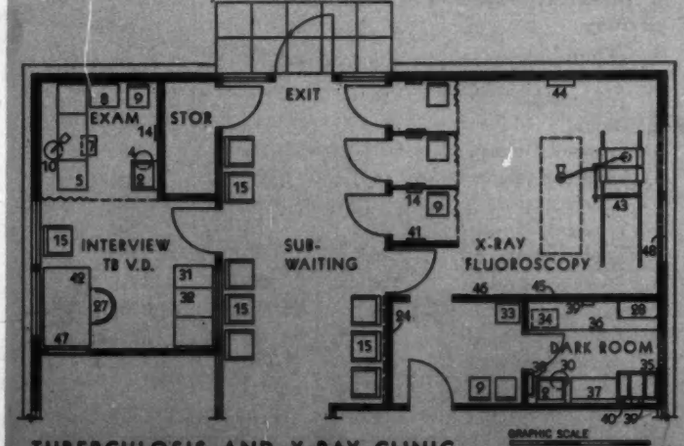
MULTIPLE USE CLINIC

GRAPHIC SCALE 0 2 4 6 8 FT.



NURSES OFFICE AND WORK ROOM

GRAPHIC SCALE 0 2 4 6 8 FT.



TUBERCULOSIS AND X-RAY CLINIC

GRAPHIC SCALE 0 2 4 6 8 FT.

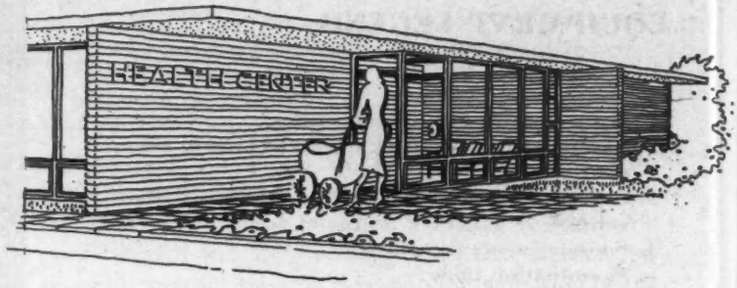
CLINIC SCHEDULES

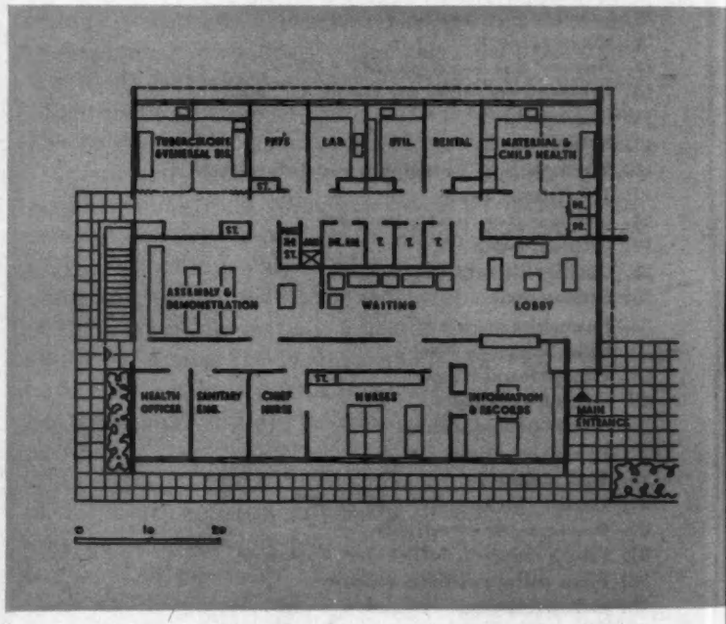
Possible clinic-use schedules based on analyses of clinic loads in public health centers (revised)

In determining space requirements for health centers a clinic schedule and personnel roster will be found helpful. Case loads and personnel requirements may be estimated according to standard practice and local vital statistics. In view of possible expansion, maximum rather than minimum standards should be used.

Session / Clinic	Type A (Revised) 35,000 Pop. Visits	Type B-1 60,000 Pop. Visits	Type C (Revised) 100,000 Pop. Visits
Monday			
A.M. Prenatal	10	12	—
Dental	7	7	—
Mental Hygiene (Child Guidance)	—	—	20
P.M. Prenatal	—	12	12
Child Health	—	—	16
Venereal Disease	22	—	—
Eve. Venereal Disease	—	25	25
Mental Hygiene	—	—	20
Tuesday			
A.M. Prenatal	—	—	12
Dental	7	7	14
Child Health	16	16	16
P.M. Prenatal	10	—	—
Dental	—	—	14
Child Health	—	16	16
Eve. Dental	—	—	14
Venereal Disease	—	—	25
Wednesday			
A.M. Dental	—	7	14
Child Health	—	16	16
P.M. Prenatal	—	12	12
Child Health	—	16	16
Thursday			
A.M. Prenatal	—	—	12
Dental	—	7	—
Child Health	16	16	16
P.M. Prenatal	—	—	12
Child Health	16	—	16
Mental Hygiene (Child Guidance)	—	20	—
Eve. Venereal Disease	—	—	25
Mental Hygiene	—	20	20
Friday			
A.M. Dental	7	7	—
Child Health	—	—	16
Tuberculosis	16[1]	20[2]	—
P.M. Dental	—	—	14
Venereal Disease	—	25	25
Mental Hygiene	—	20	—
Tuberculosis	—	—	23
Eve. Venereal Disease	22	25	25
Tuberculosis	16[3]	20[4]	23[5]
Total visits per week	145	306	477
Total visits per year	7,540	15,912	24,830
Total sessions per week	10.75	20	27.5
Total sessions per year	559	1,140	1,430
	[1] (2/mo.) [2] (1/mo.)	[3] (3/mo.) [4] (1/mo.)	[5] (2/mo.)

TYPE PLANS FOR





TYPE A HEALTH CENTER

This basic one-story health center, with floor area of 3000 sq ft, is designed for a community of approximately 35,000 population.

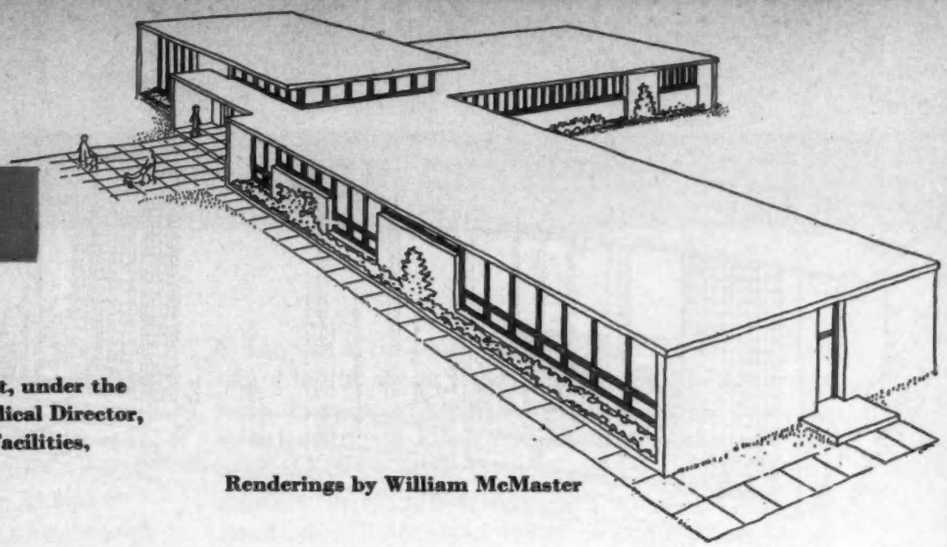
Two clinic rooms are supplemented by a utility room, a laboratory, a consultation room and a dental room along one side of an extra wide corridor, which serves as lobby, waiting and assembly room.

On the opposite side of this light and open corridor are the administrative offices. The staff will include 1 health officer, 1 chief nurse, 6 public health nurses, 1 or 2 sanitary engineers and 2 clerks.

A part basement (not shown) contains storage for equipment, supplies and dead records, a maintenance room and the boiler and fuel room.

About 7600 patient-visits can be handled per year.

HEALTH CENTERS



Planning by O. B. Ives, Hospital Architect, under the general direction of John W. Cronin, Medical Director, Chief, Division of Hospital and Medical Facilities, Public Health Service

Renderings by William McMaster

TYPE B-1 HEALTH CENTER

For a community with a maximum population of about 60,000, this one-story facility with floor area of 5960 sq ft, provides separate sections for clinics, administration and assembly, all opening off a main waiting room. The clinic wing provides facilities for tuberculosis control (including X-ray), dental hygiene and a multiple purpose area. Prenatal and child health clinics, immunizations, venereal disease treatments and test and diagnostic clinics for some chronic diseases can make use of this multiple purpose area.

The administration wing contains information counter, records room, laboratory and offices for public health nurses, health officer, health educator, medical social service worker and secretaries, plus staff toilets.

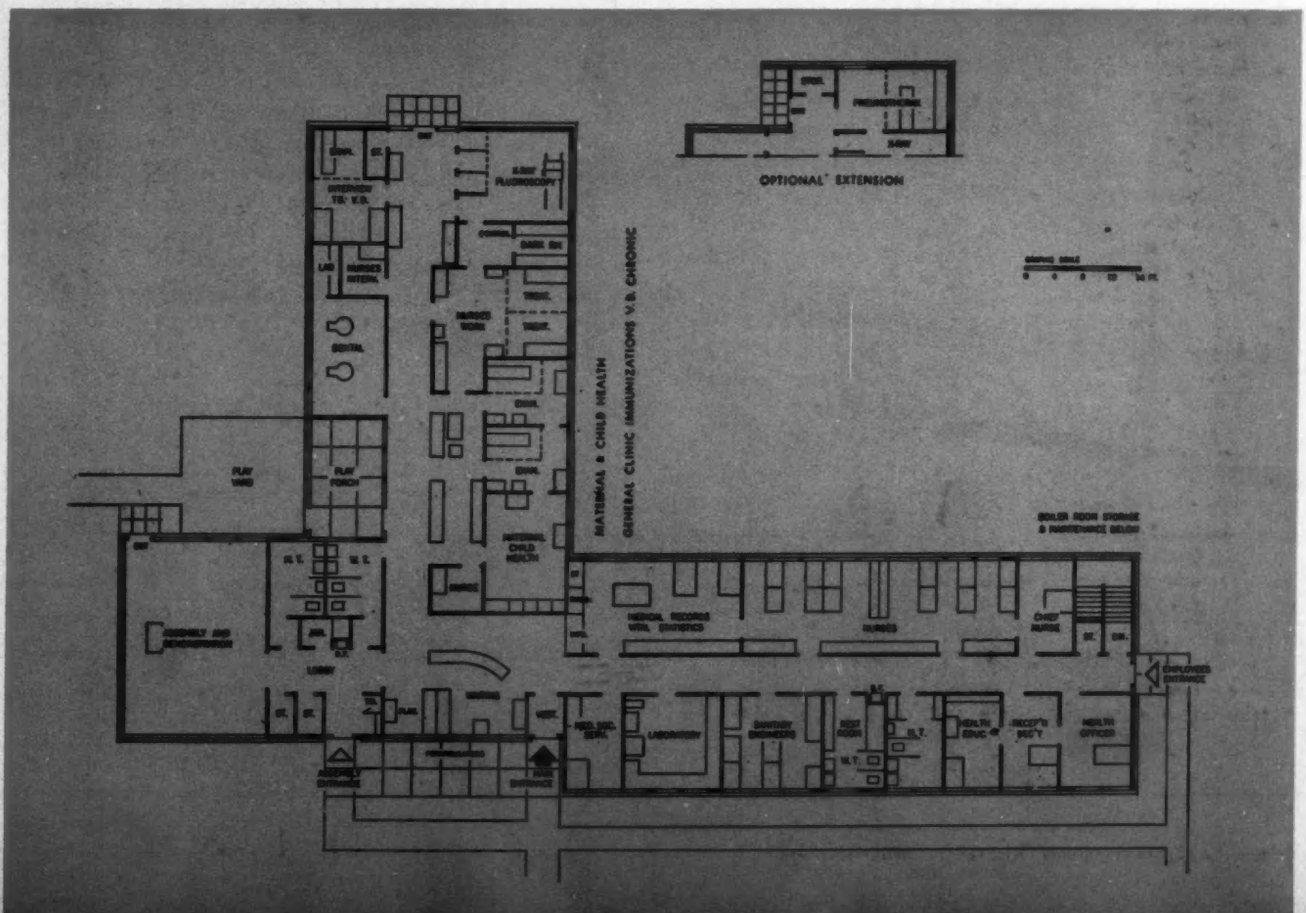
The assembly room has been provided for meetings, conferences, educational lectures and demonstration classes. This wing can be locked off separately.

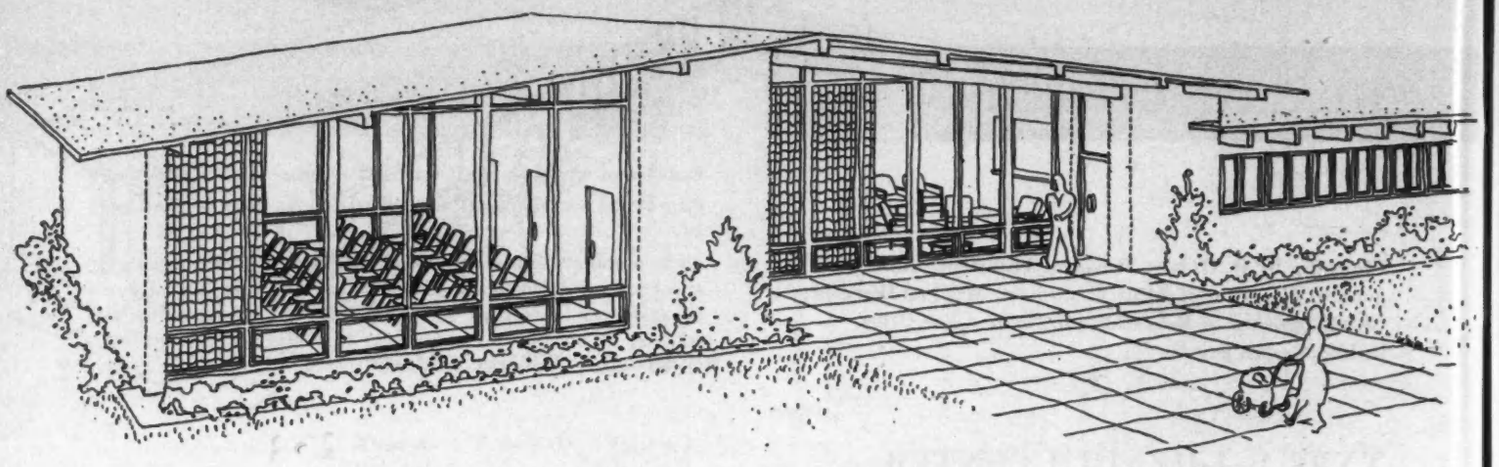
A part basement (not shown) contains storage for equipment, supplies and dead records, a maintenance room and the boiler and fuel room.

Minimum full-time staff includes 1 health officer, 1 chief nurse, 1 assistant chief nurse, 12 public health nurses, 4 sanitary engineers (including the chief engineer), 1 health educator, 1 medical social service worker, 1 laboratory technician, 2 secretaries and 3 clerks.

Part time staff may include clinic physicians, a venereal disease investigator, mental hygiene personnel, dentists, and volunteer clerks and aides.

Some 16,000 patient-visits can be handled per year.





TYPE C HEALTH CENTER

For a community with a maximum population of about 100,000, this one-story facility, with floor area of 9570 sq ft, provides separate sections for clinics, administration and assembly, all opening off a main waiting room. The clinic wing has facilities for tuberculosis control, including X-ray, dental hygiene, and a multiple purpose area. Prenatal and child health clinics, immunizations, venereal disease treatments and tests and diagnostic clinics for some chronic diseases can use this area.

The administration wing contains separate counters for clinic information and for health certificates or vital statistics in the records room. Offices for public health nurses, health officers, sanitary engineers, health educator, medical social service worker and secretaries, as well as a staff room and library and a laboratory are also provided. A rest room for female staff, staff toilets and necessary storage closets complete this wing.

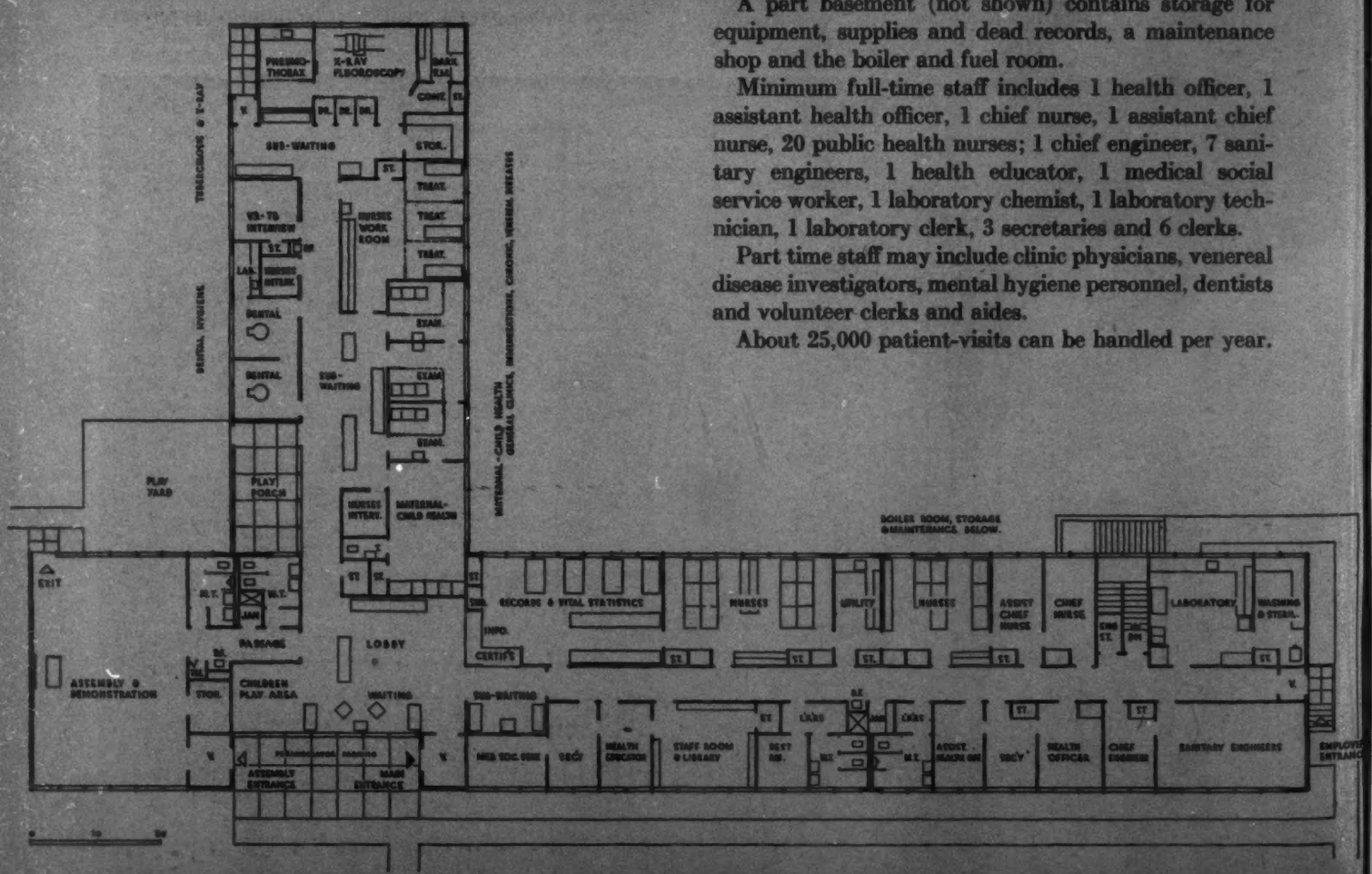
The assembly room has been provided for meetings, conferences, educational lectures and demonstration classes. This wing can be locked off from the rest of the building.

A part basement (not shown) contains storage for equipment, supplies and dead records, a maintenance shop and the boiler and fuel room.

Minimum full-time staff includes 1 health officer, 1 assistant health officer, 1 chief nurse, 1 assistant chief nurse, 20 public health nurses; 1 chief engineer, 7 sanitary engineers, 1 health educator, 1 medical social service worker, 1 laboratory chemist, 1 laboratory technician, 1 laboratory clerk, 3 secretaries and 6 clerks.

Part time staff may include clinic physicians, venereal disease investigators, mental hygiene personnel, dentists and volunteer clerks and aides.

About 25,000 patient-visits can be handled per year.



PLANNING THE PUBLIC HEALTH CENTER

HEALTH CENTERS under the Hill-Burton program, range in size from 1000 to 20,000 sq ft in area. The national median size is about 5000 sq ft, but the most common size is the health center with about 3000 sq ft. The latter is considered a small health center, capable of serving a rural area population of up to 35,000.

Desirable minimum or basic functions of a local health department include vital statistics, sanitation supervision, communicable disease control, laboratory services, maternal and child health, dental hygiene and health education. To these has recently been added control of chronic diseases, which promotes case finding and diagnostic services for arthritis, cancer, cardiac, or diabetes cases among others. Rehabilitation for these and other types of cases is very often available. Accident prevention, the hygiene of housing, industrial hygiene, school health services, and hospital and medical care are other areas of service which are being incorporated into many local health programs. Most state governments have established within their official health agencies consulting services which are prepared to assist in organizing these health services at the local level. Fitting the new service into the local health program must be carefully planned after thorough studies have been made. Such studies must aim at improving the whole field of public health.

Space requirements may be determined largely from the clinic schedule and the list of personnel. The clinic schedule is an arbitrary allotment of hours to accommodate estimated case loads for the several health services outlined in the program. Case loads are estimated from a study of local statistics, pertinent to each of the proposed health services. Type health center plans and schedules have been developed, using national averages and standards. It is suggested that these schedules be used only as patterns into which local statistics are substituted. Some services, such as dental hygiene, are quite variable in different areas and, as a result, solid standards are not available. Consultation with local health officials is then advisable. Provision for maximum rather than minimum loads is recommended in view of future expansion.

The general architectural plan can now take shape in a schematic drawing showing the arrangement and relationship of the five main areas of a health center. These are:

1. Waiting, including the main entrance.
2. Administration, including offices and record space.
3. Clinic, including sub-waiting, exam, treatment and consultation rooms.
4. Assembly, including storage for projector, film, etc.
5. Service, including heating, storage and maintenance rooms.

The size of the health center laboratory will be determined by the size of the community and the amount of work done by other laboratories in the area or at the state level. The laboratory serves the clinician, the epidemiologist, the nurse, the milk inspector or the sanitary engineer, in examining submitted specimens. Today's standards indicate about 6000 such examinations a year per 100,000 population. Space and equipment for conducting bacteriological, microscopic, physical and chemical examinations and analyses must be calculated, keeping in mind possible expansion of services in these fields. Proper storage space for biological products, drugs, and antibiotics, to be drawn upon by private physicians and by disease prevention services, should be studied and provided. The laboratory is usually located adjacent to the sanitary engineers, as it largely serves them.

In designing the clinic area a certain freedom of use of some areas should be considered. Most of the services provided in health center clinics today may safely share common areas and facilities. Multi-use of clinic space should be exploited in the interest of economy, not only of expensive space but of valuable personnel. Careful scheduling can accomplish much in this direction. In small health centers, general clinics are not uncommon.

The specialized rooms such as dental and X-ray rooms, are not adaptable to use by other clinics. Crippled children, multiple screening programs, cardiac or cancer clinics, are some which might use the X-ray room. The dental room might also serve cancer clinics or multiple-screening programs for oral inspections.

It is suggested that a type of examination-consultation room be developed wherein the physician can do a complete examination, consultation and write-up on each patient. This is facilitated if the usual dressing cubicle is replaced simply by a draw curtain about the examination area of the room. Concern over the safety of their belongings is relieved and any tendency to dawdle is discouraged.

Such exam-consultation rooms should be arranged in groups of two or more intercommunicating rooms to permit the physician to work most efficiently. While the patient prepares for examination behind the curtain, the physician can be checking his medical record or attending the patient in the adjoining room. Consultation may proceed during examination and continue while the patient dresses.

It is possible then to place sub-waiting areas and nurses' work stations for one or more clinics with the bank of exam-consultation rooms. The nurses' work stations may be within the sub-waiting area, in the waiting room for maternal and child health or in a kind of utility-treatment room, set up for injections, in connec-

tion with venereal diseases and other contagious diseases and for minor emergency treatments, blood tests, etc. A toilet facility is also necessary in this area.

These exam-consulting rooms are adaptable to many uses by the nurses. Private consultations with patients, private phone calls in connection with patients, and write-up work can be done by them in these rooms. In case there is no room provided for venereal disease interviews one of these rooms might well be used.

Though separate interview and examination facilities are still desirable for the tuberculosis clinic, with proper scheduling and technique, these rooms could be utilized where space restrictions make it necessary.

Case-finding, diagnostic and post-hospital cases comprise the bulk of the tuberculosis clinic work. Pneumotherapy requires weekly treatments, so special arrangements, such as referral to a specialist or to a hospital, may be expedient. Pneumotherapy in the health center is said to have diminished to an average of only 10 per cent of the regular tuberculosis clinic load today.

The tuberculosis clinic should provide facilities for at least 16 cases per session, to justify the mustering of the one medical specialist, one technician, two nurses experienced in interviewing, and one clerk-receptionist, needed to operate this clinic efficiently. The physician will need an exam-consultation room, with facilities for reading and interpreting X-ray films. The technician will operate the X-ray room where a combination unit for radiography and fluoroscopy should be provided. This will provide for 14 in. by 17 in. plates as well as a quick method of checking chest conditions with the fluoroscope. The fluoroscope is also needed for the pneumotherapy process.

If photo-fluorographic (35 and 70 mm. film) case-finding programs are planned for the health center for an average of 50 or more per session, they may warrant the increased cost of equipment and increased room size entailed in the more powerful unit and the supplemental equipment, such as a hood and camera. Usually case-finding is more economically provided by mobile X-ray units which visit schools, health centers and other local meeting places in most states. Many hospitals are also providing this service for each patient coming through their receiving departments.

Pneumotherapy will require a special treatment room, adjacent to the X-ray room. This room should provide a work counter with sink and cupboards under. At least three dressing cubicles between the X-ray room and sub-waiting are required in connection with this treatment, as well as for the regular radiographic work.

Two nurses will be needed to interview patients, to advise them, according to the physician's findings and to mobilize their courses of treatment, hospitalization, social welfare and rehabilitation. For this purpose, each nurse should have a small semi-private room or cubicle adjacent to sub-waiting and to the physician's exam-consultation room. The clerk-receptionist's station may be set up adjacent to the sub-waiting area where control of the patients and their medical records will be maintained.

Demonstration work in the maternal and child health clinic has expanded to include fathers in many areas. This, coupled with crowded clinic sessions, has often resulted in formation of special instruction classes which must be held in the assembly room or other larger meeting places.

The provision of dental facilities in the health center is decided in the program. In a community of 50,000, for example, dental care for only those school children who cannot pay will justify a full-time dentist and a fully equipped dental facility. Dental examination of school children is provided in most of the schools of the nation. The large majority of those needing care are referred to family dentists. Indigent cases, through local dental societies, are cared for in private offices, hospital clinics, health centers, etc. Many health departments are also providing dental care for pre-natal, pre-school, venereal disease and tuberculosis patients and these clinics are very often synchronized in health center schedules.

Nutrition programs will seldom require space in the average health center. They are usually part of the health education program and are integrated into the work of the health educator, the public health nurses and the clinic physicians. In a large urban or district health department, office space should be provided for a nutritionist or nutrition supervisor. This specialist will inform and train the nurses in good nutrition for use in their everyday field work.

It is estimated that one full-time mental health clinic per 50,000 population should be provided as a minimum need. Mental health programs are still in an early developmental state and standards are quite undetermined. A full-time clinic is defined as one with at least one professional staff member on duty 35 hours or more per week. A fully effective mental health service should have the skills of a multi-discipline team, made of a psychiatrist, a clinical psychologist, two psychiatric social workers and a clerk-typist.

In the average health center, where a part time mental health clinic might be set up, common use areas and multi-purpose examination rooms might suffice, with careful scheduling. A mental health clinic should hold at least two sessions per week, preferably three. Although child guidance predominates in these clinics it is recognized that mental hygiene has much to contribute in the field of chronic diseases and geriatrics.

In the field of chronic diseases the efforts of health departments are still concentrated on education of the public in improved health habits, leading to prevention or early diagnosis of heart disease, cancer, diabetes or other similar long term incapacitating diseases. Mass case-finding programs seem not far in the future. The health center should be planned accordingly, for adaptation of existing space and coördination of extensions.

CHECK LIST ON HEALTH CENTER PLANNING

■ Multiple use of clinic rooms is considered practical if proper technique is enforced. General clinics, wherein a variety of health services are rendered in one area at one session, are common. However, where certain individual clinic loads are heavy, it is practical to limit the clinic use to that one health service.

■ Dressing cubicles for examination rooms are not recommended. If draw curtains are provided around the examination table area, dressing and undressing is expedited.

■ Assignment of patients to several sub-waiting areas reassures the patient of more personal and prompt attention. Location of these areas on an exterior wall makes them more cheerful and inviting. Lightweight metal armchairs permit a variety of arrangement. They are more comfortable than fixed or built-in benches.

■ Counters and cabinets are not feasible in examination rooms. Rooms equipped with a lavatory, an examination table, an instrument table or cabinet and an examination light are adequate. Examination rooms should be at least 9 ft wide, however.

■ Toilets should always be provided within or directly accessible to the clinic area.

■ The dental clinic should be located close to the main lobby to minimize interference with other clinics. It should be arranged as an optional area, readily omitted as the program dictates.

■ The pneumotherapy room should also be planned as an optional area.

■ Photoflurography (small-film mass case finding) should be provided in the X-ray room only if 50 or more cases are processed per clinic session. This entails extra space and cost to provide for the more powerful unit and supplemental camera, hood, etc.

■ X-ray film files for 5 years are usually stored in the tuberculosis interview room. Dark rooms are often too small even for occasional use. A minimum inside dimension of 6 ft by 6 ft is recommended. The door width should be determined by the size of the dark room equipment.

■ Outdoor play area, located off the clinic wing, should be enclosed and a portion of it covered and screened.

■ Provide appropriate and properly sized storage closets in convenient locations in the clinic wing.

■ In the nurses' workroom instruments and materials used in the clinics are cleaned, sterilized and set up. Here, also, blood samples and smears are taken and stored or examined. Injections and immunizations are given and entries are made on patients' record cards. This room is also adaptable to use by diagnostic clinics for cardiacs, diabetes, arthritis, etc.

■ Assembly rooms are valuable not only for providing health education programs but for other community use. Facilities for movies, microphones and storage of supplementary equipment such as film projectors, film, display racks, folding chairs and tables as well as posters, pamphlets and other printed matter should be provided. Air conditioning will also increase the value of the assembly room. A built-in kitchenette including a range, a sink and cupboards is often provided for demonstration work in connection with some clinics.

■ Staff toilets should provide a few lockers to accommodate the volunteer workers. Rest rooms are also recommended at least for the female members of the staff.

■ The offices of the health officer and his staff are preferred at a distance from the public lobby and near a separate staff entrance.

■ The laboratory is equipped to serve the clinic and the sanitary engineers in performing bacteriological, microscopic, physical and chemical examinations and analyses of specimens submitted or collected. It is located adjacent to the sanitary engineers, whom it largely serves. Proper storage space is provided for fresh supplies of biological products, drugs and antibiotics, which are distributed to physicians and disease prevention services, according to policy established by the State Agency supplying them.

■ Where play areas are assigned in waiting rooms, a cabinet for storage and display of toys should be provided.

■ A covered terrace for parking of perambulators is much appreciated.

■ Avoid entering public toilet rooms directly from waiting areas. Water closets should be separated from lavatories by stall partitions wherever possible.

■ Future extensions to all wings should be considered in anticipation of new health programs and added services.

■ It is suggested that high window sills be avoided in administrative offices and waiting areas, in the interest of better ventilation and view.

■ Air conditioning of the entire health center building is desirable, wherever possible.

■ Acoustical treatment of ceilings to reduce sound transmission must be considered, especially in clinic examination and interview rooms and in conference or assembly rooms. Better insulation against transmission of heat should be provided in roof spaces, especially where flat roofs are used.

■ The nurses' work room should be located adjacent to the medical records for convenient reference. Where space permits, the area should be subdivided into rooms of four nurses each.

MECHANICAL AND ELECTRICAL SYSTEMS

THE mechanical work consisting of: plumbing, heating, ventilation, and in the warmer climates, cooling systems, requires careful study to achieve efficient service at a minimal operating cost.

Plumbing. Fixture placement and service piping should be so planned as to permit future room changes with a minimum of disturbance. The selection of fixtures and fixture trim for the clinical areas is of particular importance. Hand washing facilities used by doctors and nurses in the examination and treatment areas should be trimmed with elbow, knee action or foot action valves as required.

Non-corrosive water heater storage tanks and hot water piping systems are recommended.

Heating. Hot water heating with thermostatically controlled zones provides an economical system for this type of structure where intermittent use of the clinical section may occur and where evening meetings utilizing the assembly room are not uncommon.

In warmer climates where air cooling is essential, a warm air heating and cooling system utilizing the same duct system may reduce installation costs.

Where a separate air cooling system is contemplated, consideration should be given to individual systems for administrative and clinical areas.

Automatic firing is recommended to provide for weekend and unsupervised heating service.

Ventilation. As mass clinics are the order rather than the exception, ample ventilation is recommended for assembly and waiting rooms which will often be overcrowded. Ample ventilation is also required for the X-ray rooms which may be tight areas because of light proof shades and ray protection required. The exhaust from film dryer and the dark room should be discharged to the outside.

Electrical. The minimum standards recommended for electrical work in health centers is that of the National Electrical Code. Where movable partitions are installed, wiring should be arranged for minimum interruption of service when such partitions are relocated.

X-ray equipment and wiring should conform with the applicable requirements of article 660 of the National Electrical Code, and the National Electrical Manufacturers Association's "wiring data and minimum power requirements." As a minimum, the power feeder to the X-ray unit should be direct from the main distribution panel or from a separate transformer. Where portable X-ray is used, polarized receptacles on one circuit are recommended to minimize the probability of other loads being plugged in on the circuit and causing voltage fluctuations while the X-ray unit is being operated. Rooms or areas containing fixed (nonportable) X-ray equipment should have ray protection as recommended in National Bureau of Standards' Handbook 41. (See also Handbook 50, "X-ray Protection Design.")

For supplying power to mobile or ambulatory bus X-ray units, two weather resistant (raintight) receptacles on separate circuits, located outside the building convenient to parking area are recommended: One 60A., 220 V., 1-phase, 3-wire, 3-pole for X-ray, and one 30A., 110 V., 1-phase, 2-wire, 3-pole for lighting, heating and other utilities.

Proper lighting is conducive to efficient work, influences better housekeeping, accentuates architectural beauty and is economical. Fixtures should be of a type, or so located, as to avoid objectionable glare. To encourage proper maintenance, fixtures should be easy to clean and to relamp. Parking lots should be lighted. Lighting intensities for comparable areas are given in "Recommended Lighting Practice," as published in the March 1955 issue of *The Modern Hospital.*

A signal system, either buzzer or intercommunication type, should be provided which will permit the health officer to originate calls to other principal areas.

Catastrophes. In case of a major disaster such as that of enemy use of nuclear weapons and biological warfare, health centers located in or near target areas would be vitally needed to relieve overcrowded hospitals of some of the ambulant casualties. This would involve treatment and facilities somewhat different from those commonly required in health centers. As an example, decontamination would become an important and serious problem in treating people who have radioisotopes or deleterious biologicals on their person or clothing. For this service, washing or shower facilities would be needed at some segregated location so as to minimize the possibility of scattering these contaminants in other parts of the building. Disposal of contaminated clothing and a supply of other clothing should also be considered.

In view of the remote possibility, or infrequency, of such a disaster and the high cost of construction, it is recommended that health centers be designed to meet ordinary peacetime needs but that in probable target areas consideration be given to an arrangement whereby certain areas may be easily converted to such emergency use, either inside or outside the building.

COST EXPERIENCE

National average cost figures for Public Health Centers participating in the Hospital and Medical Facilities Survey and Construction Program, U. S. Department of Health, Education and Welfare:

Building and Fixed Equipment	Project Cost
$15.98 per Sq. Ft.	$19.02 Sq. Ft.

The cost information that follows is also derived from the same source material. Additional cost information may be obtained from The Division of Hospital and Medical Facilities, Public Health Service, U. S. Department of Health, Education and Welfare, Washington 25, D. C.

PUBLIC HEALTH CENTER COST INFORMATION

Expressed as A Percentage of Average Project Cost.

General Construction	60.8%
Mechanical	15.1%
Electrical	6.2%
Contingency	2.3%
Total Construction Contracts	84.4%
Group II & III Equipment	9.2%*
Site Survey and Soil Investigation	.2%
Architect's fee	variable
Supervision & Inspection at Site	1.2%

* In many projects this equipment cost figure represents only the cost of equipment purchased to augment serviceable equipment on hand. Public Health Centers equipped with new Group II and III Equipment may be as much as 100% higher than this figure.
† variable.

PRELIMINARY COST ESTIMATES

Public Health Center Type	A	B-1	C
for community with a maximum population of	35,000	60,000	100,000
Approximate Gross Floor Areas:			
Basement S. F.	692	1,840	2,550
1st Floor S. F.	3,008	5,960	9,570
Total S. F.	3,700	7,800	12,120
Project Cost:			
Construction Contract	$59,130	$125,070	$194,395
Equipment (Group II & III)*	6,500	13,630	21,185
Site Survey & Soil Investigation	150	300	400
Architect's fee†	3,500	7,400	11,500
Supervision & Inspection	840	1,600	2,550
Acquisition of Site	variable	variable	variable
Other	180	200	250
Total	**$70,300**	**$148,200**	**$230,280**

Project cost per S. F. (site not included) $19.00.

NOTE: The Construction Contract figures include an amount normally required for contingencies and Group I Equipment.

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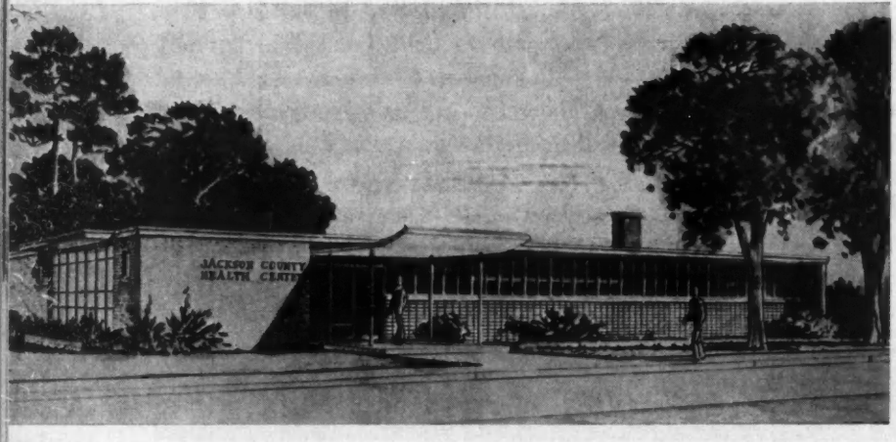
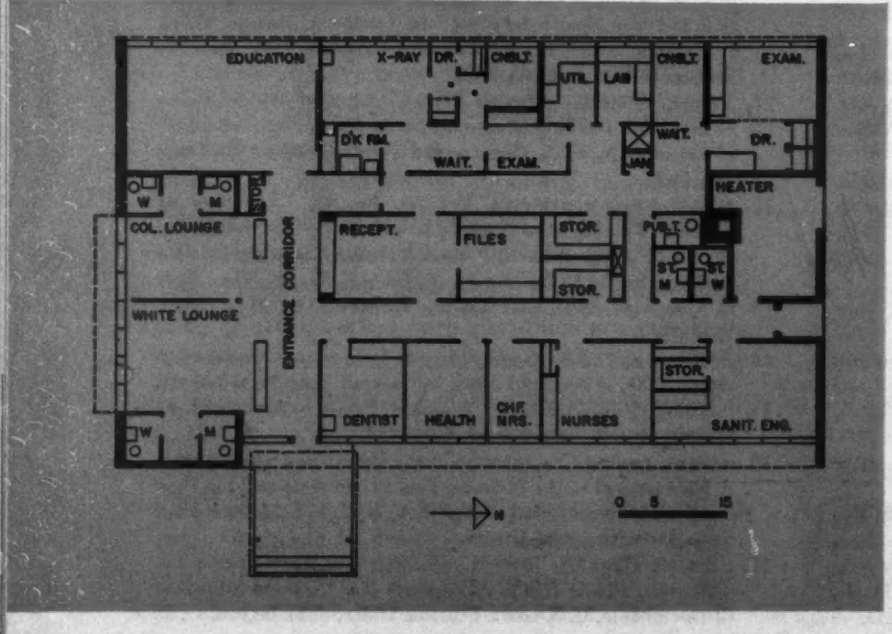
HEALTH CENTER PROJECTS

THIS one-story health center serves a county with a population of approximately 20,000. It is conveniently located within one block of the Jackson Hospital. The plan separates offices from clinic areas, with storage space between them. There are the usual offices for health officer, dental officer, nurses and sanitary engineer. The clinic serves for venereal disease, tuberculosis, maternity and child health. VD and TB clinics use the spaces nearest the X-ray department; maternity and child health are isolated in separate rooms.

Construction is concrete slab on grade. Exterior walls are brick, with aluminum awning type windows. Tile wainscots are used on walls of clinics, examining rooms, utility rooms, darkrooms; other interior walls are of plaster. Summer-winter air conditioning is used throughout the building. The building contains 5000 sq ft; cost something less than $75,000.

1. Jackson County Health Center
Marianna, Florida
Sherlock, Smith & Adams
Architects and Engineers





TWO PUBLIC

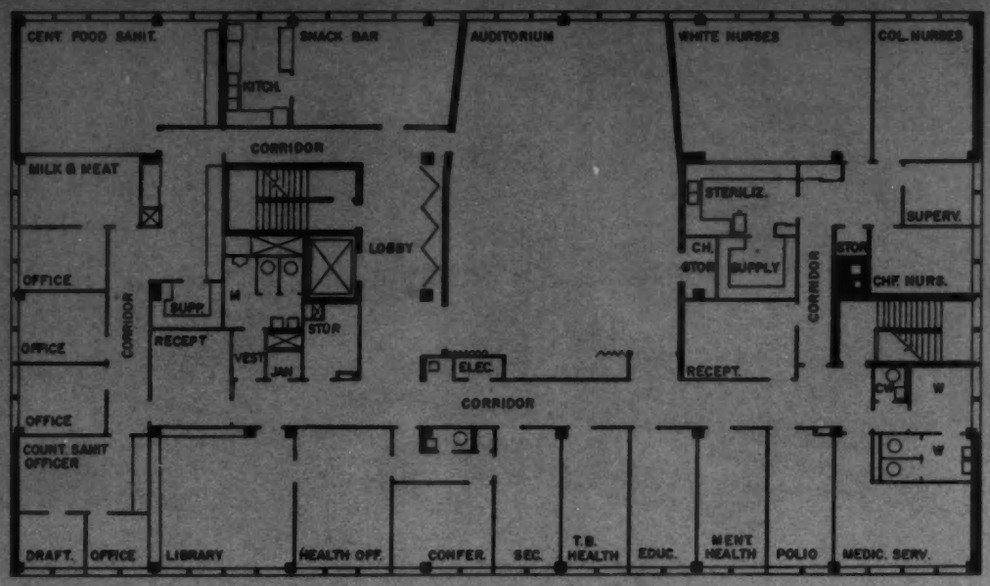
2. Montgomery County Health Center
Montgomery, Alabama
Sherlock, Smith & Adams
Architects and Engineers

ONE of the larger county health centers, this one goes to two stories, contains 24,000 sq ft, and cost almost $500,000.

It houses the usual public health activities and facilities plus some of those not found in smaller centers. There is a mental health clinic, and clinics also for polio therapy and immunization. Educational sessions are correspondingly increased, X-ray facilities are more comprehensive, and the work and activities of many charitable organizations are accommodated in the building.

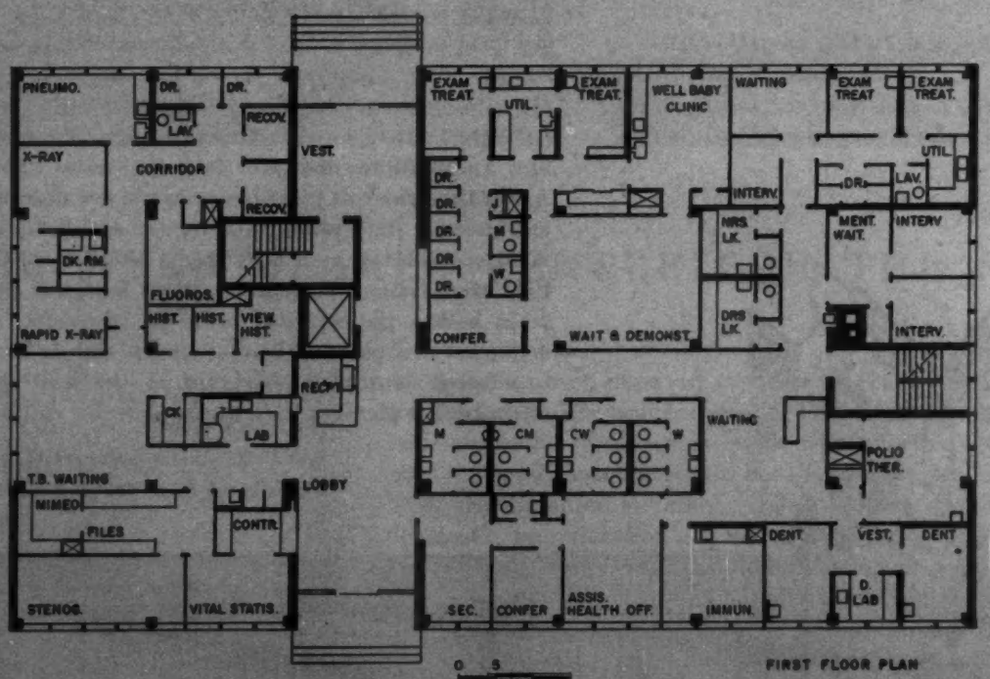
The general office quarters are on the second floor, clinics and related activities on the first.

Construction uses aluminum wall panels with tile back-up at spandrels, and porcelain enamel panel inserts. Windows are of heat resisting glass, and the building is fully air conditioned.

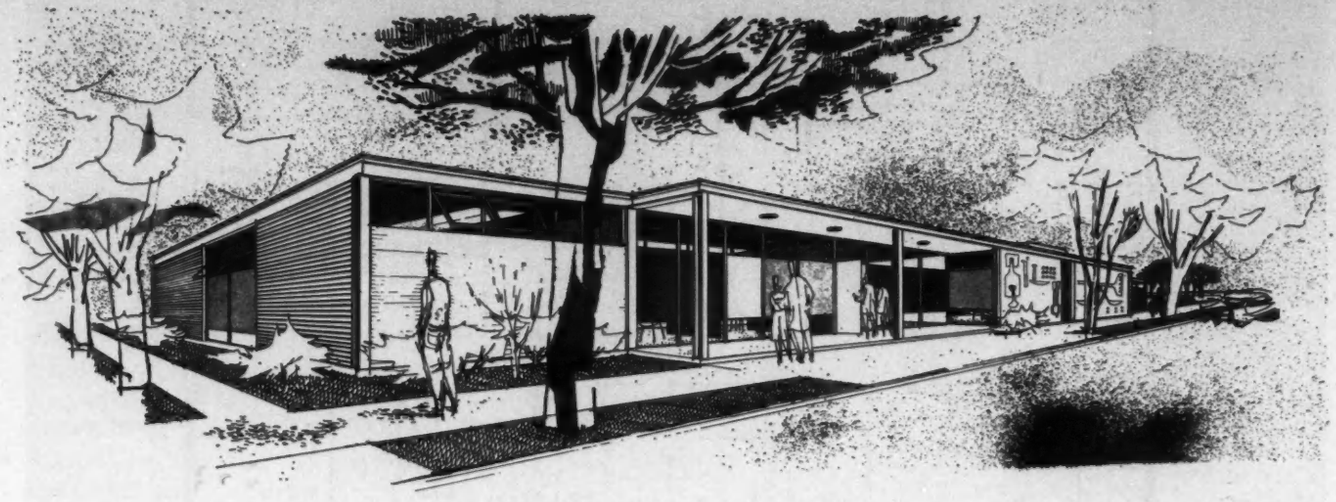


SECOND FLOOR PLAN

HEALTH CENTERS FOR COUNTIES IN THE SOUTH



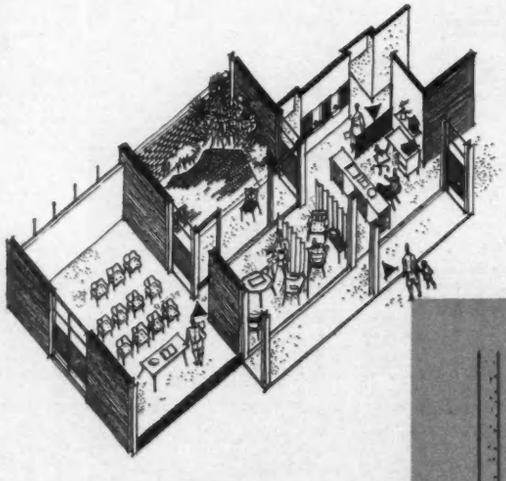
FIRST FLOOR PLAN

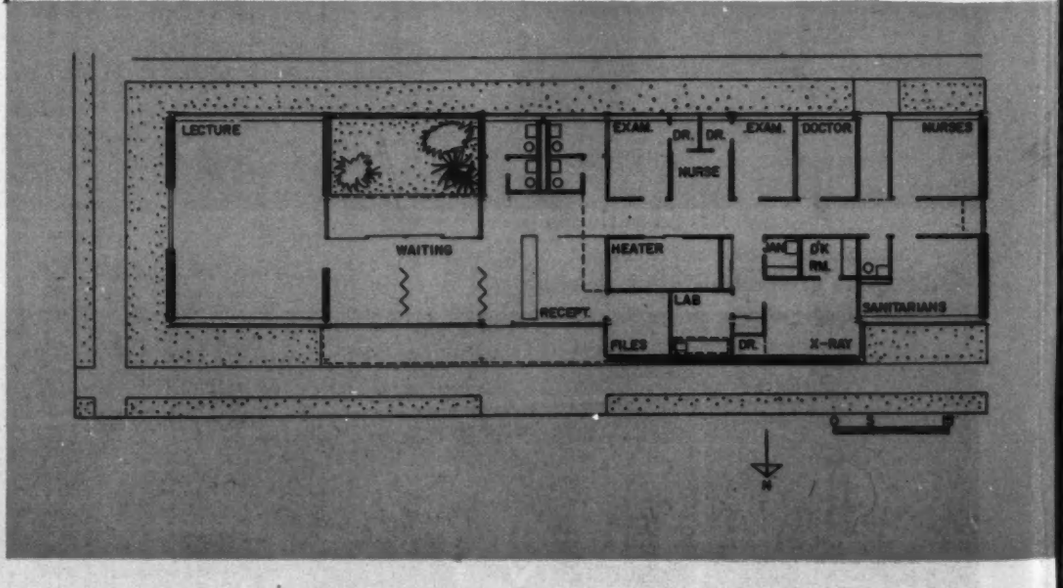


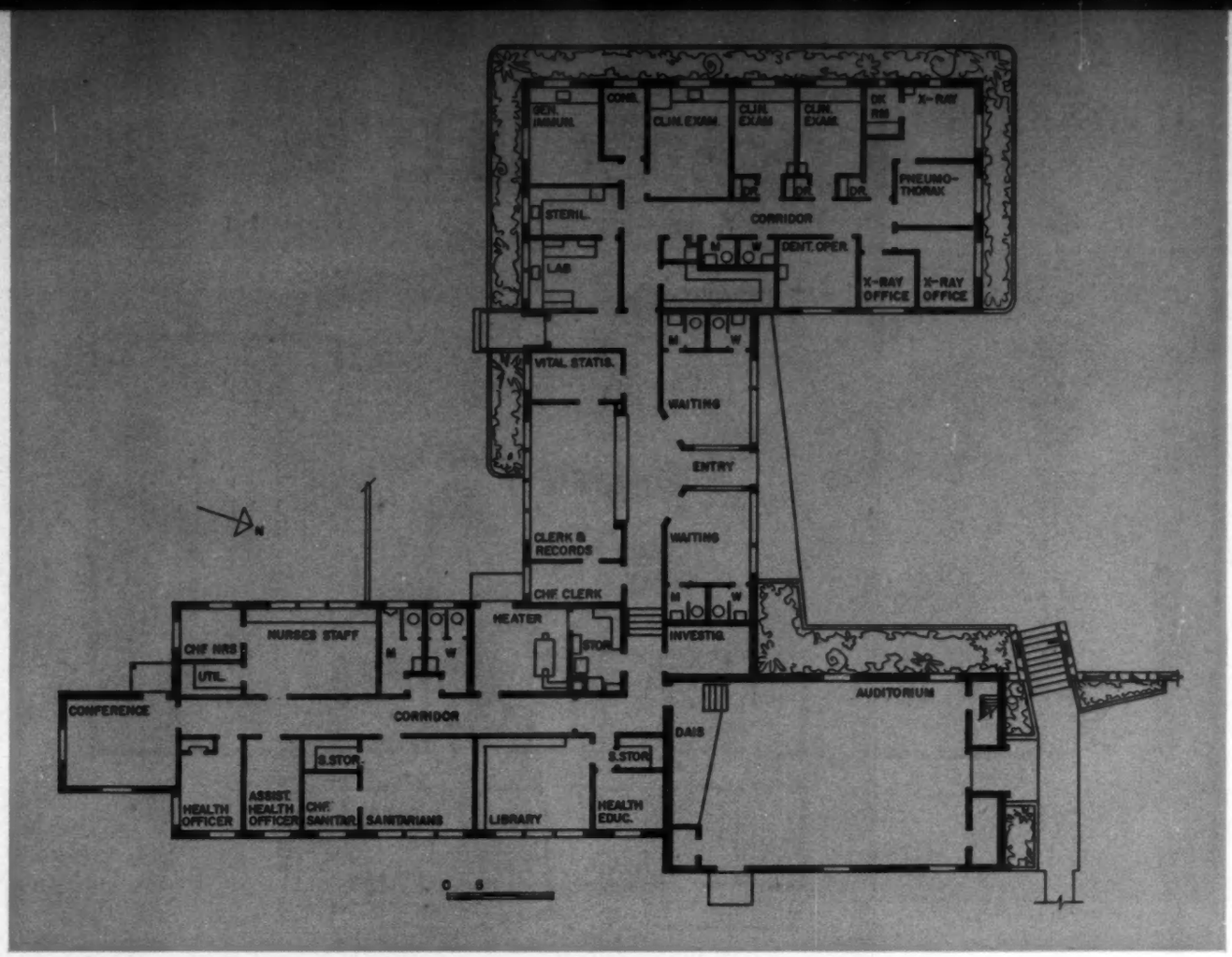
SMALL HEALTH CENTER FOR A RURAL TOWN

Washington Parish Health Clinic
Bogalusa, Louisiana
Burk, Le Breton and Lamantia
Architects and Engineers

HERE is another health center built close to (two blocks from) the local hospital, which can readily extend its diagnostic work. So the center's functions are on the minimal side — offices for the sanitarians and nurses, who really occupy the building only for report-writing and conferences; and clinic space for shots and vaccinations and pre- and post-natal care to mothers. Again the principal planning precepts are observed — separate entrance for staff, public, and for the auditorium. The building is air conditioned by a heat pump installation. Construction is light steel frame on concrete spread footings; exterior walls of 10-in hollow tile, exposed brick on two sides, steel sash and enameled steel panels. Floor is concrete slab on fill. A nice feature is a small controlled courtyard at the waiting room, which offers both a pleasant view and a place for children to play.



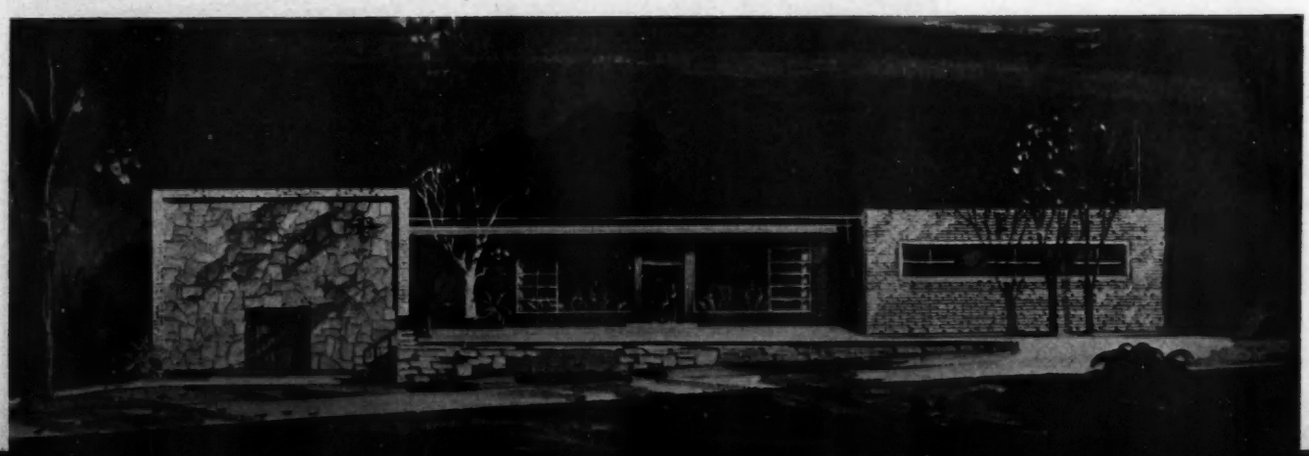


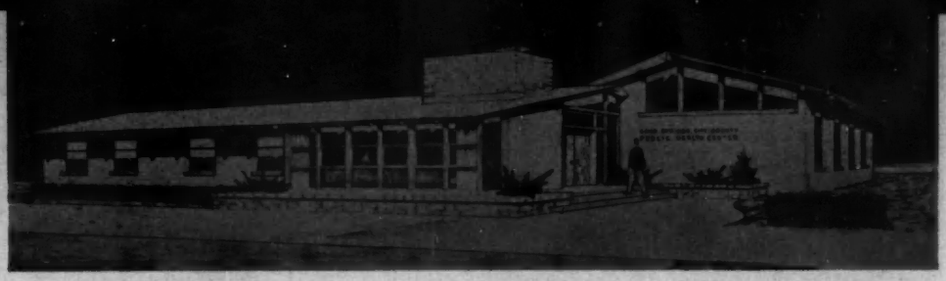


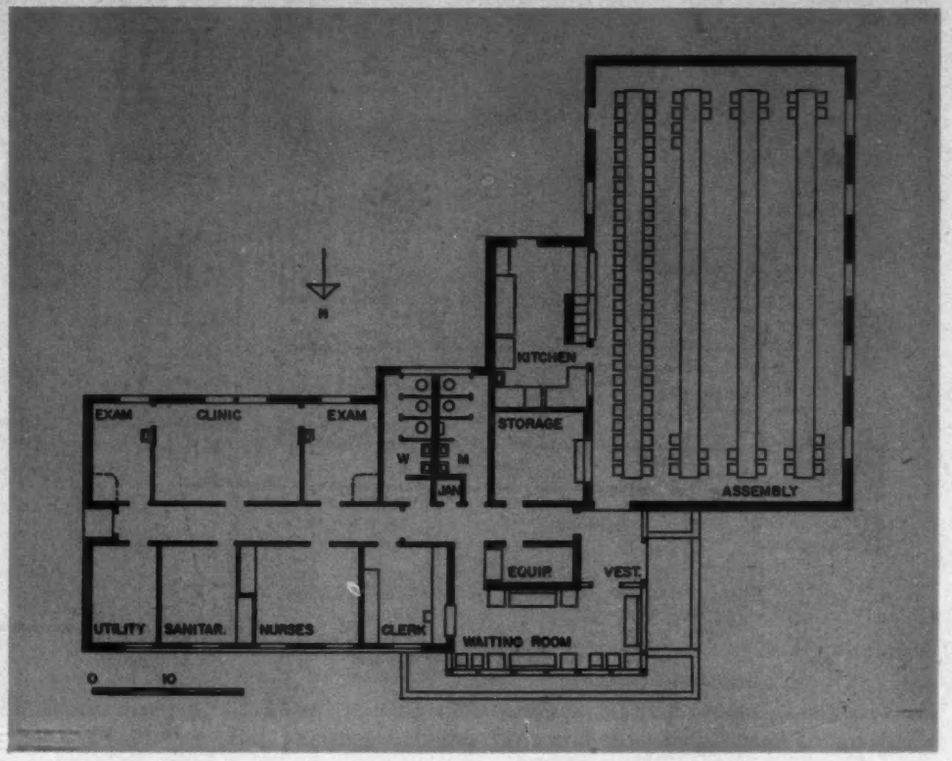
MEDIUM-SIZED HEALTH CENTER FOR THE SOUTH

Laurens County Health Center
Laurens, South Carolina
Lyles, Bissett, Carlisle & Wolff
Architects and Engineers

IT HAS often been observed that the preventive techniques of the modern public health center are especially useful where a large proportion of the people are by no means wealthy, it being good economics to minimize the need for full hospital treatment. This health center is rather typical in that respect — good diagnostic, immunization and educational facilities, good quarters for the official guardians of local food, water and sanitation, a large auditorium for health programs. The building separates the two classes of space by taking natural advantage of a sloping site, with the office space in a separate wing at a level a bit lower than that of the clinic portion. The auditorium has its own entrance, can be shut off from the rest of the building.



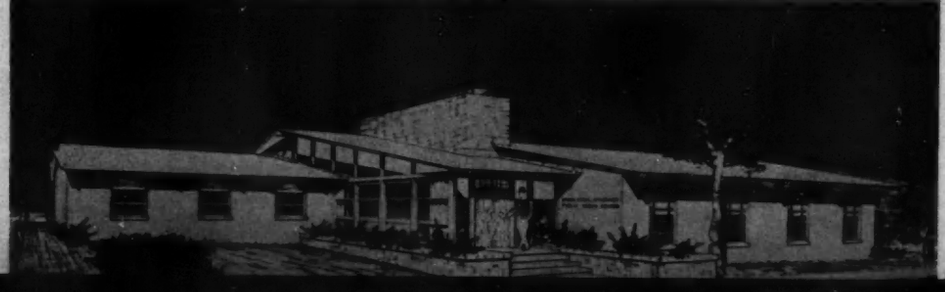




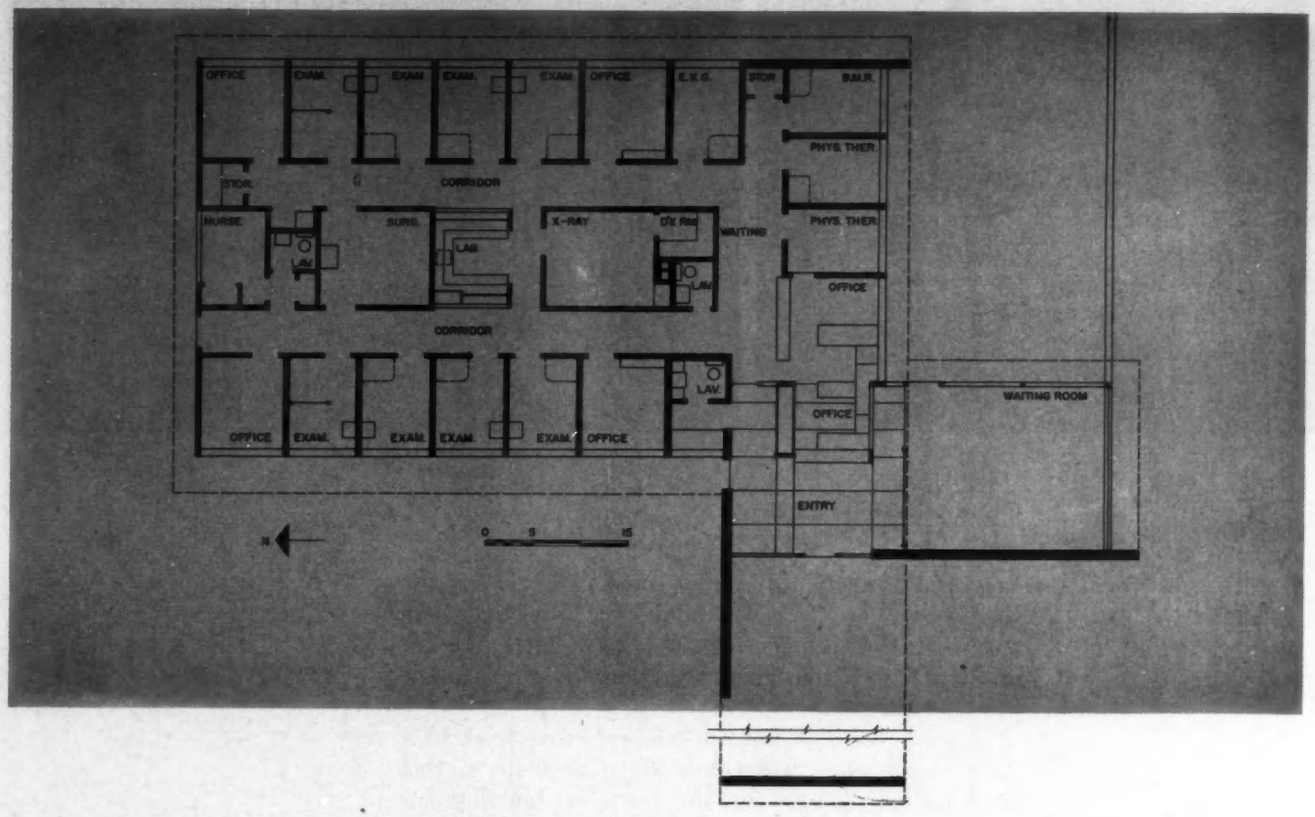
TULSA BUILDS SEVERAL HEALTH CENTERS

Outlying Health Centers
for Tulsa County
Tulsa, Oklahoma
McCune, McCune & McCune
Architects and Engineers

HERE are three of five outlying public health centers, by the same architects, for a forward-looking program by Tulsa County. All five have similar plans (the one above is typical), and all were designed for a friendly, residential character. Health education is strongly stressed hence the larger assembly room, with kitchen for demonstrating food handling techniques. These facilities prove useful also for group luncheons and conferences in connection with health programs. The clinic department works on daily schedules for different health problems. The outlying centers operate in conjunction with a large downtown center, from which the program is administered.



DOCTORS' OFFICES FOR GROUP PRACTICE



1. Doctors' Clinic
Lake City, Washington
Paul H. Kirk, Architect

WHEN doctors want their own buildings, for a more or less clinical type of practice, they commonly pose just such a problem as this one. In this instance two doctors wanted accommodations for themselves and two additional doctors to be brought in as assistants. The strip of four examining rooms separates the two principals on opposite sides. Common facilities — X-ray, laboratory and surgery — form a sort of mechanical core. Rooms for BMR, therapy and shots by nurses are grouped along the front. Patients in the waiting room do not see other patients enter or leave, an idea of the doctors

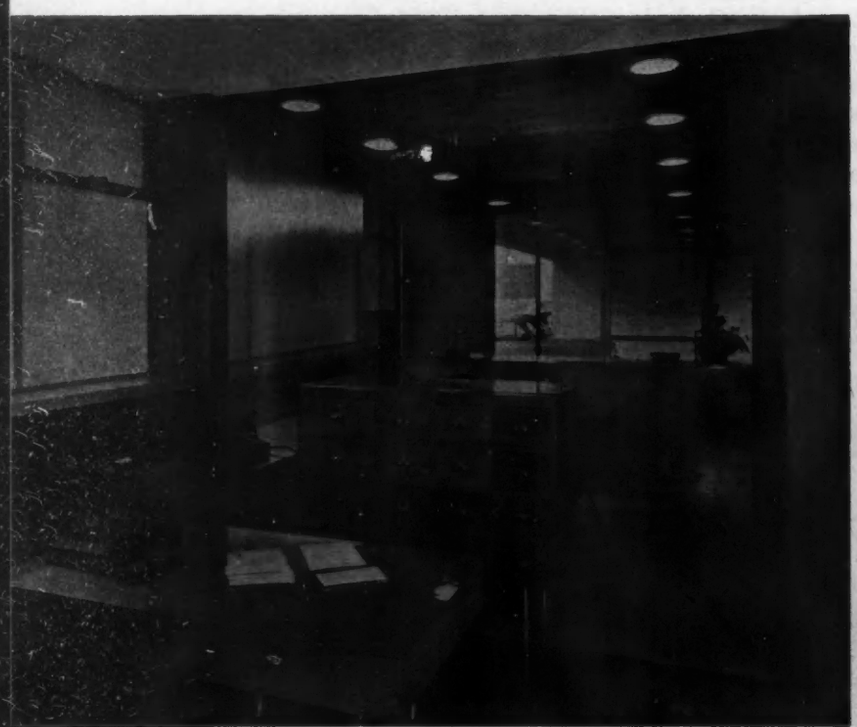
Dearborn-Massar

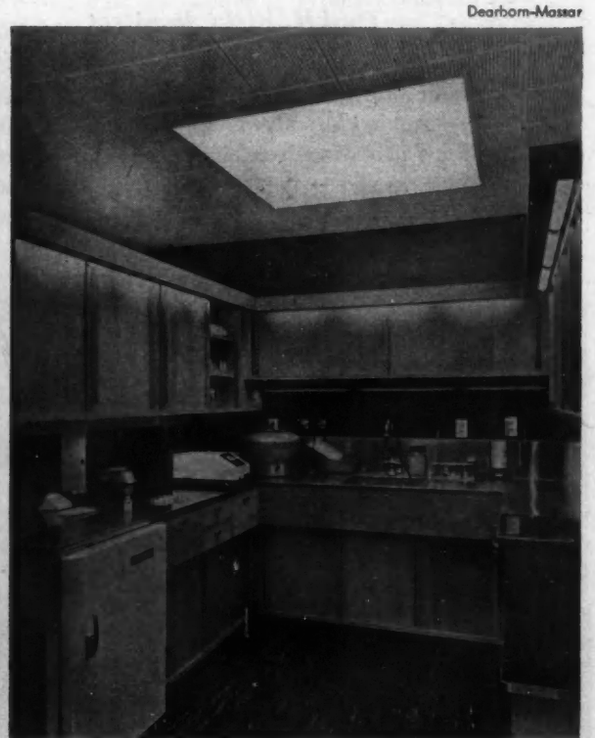
Clinic in Lake City, Wash.

to obviate impatience in case some patients, say for shots, are ushered in and out quickly. One of the nicest features is the open court beside waiting room (picture on cover), which is bound to induce some relaxation in patients waiting.

The exterior is of smooth "clinical" face brick in a light cream color with dark manganese spots, this brick setting the color note for the whole building. Interior woodwork is walnut, matching the dark of the brick. Corridors were painted a brownish-beige. Even the landscaping was chosen to contribute bronze-green or copper tones.

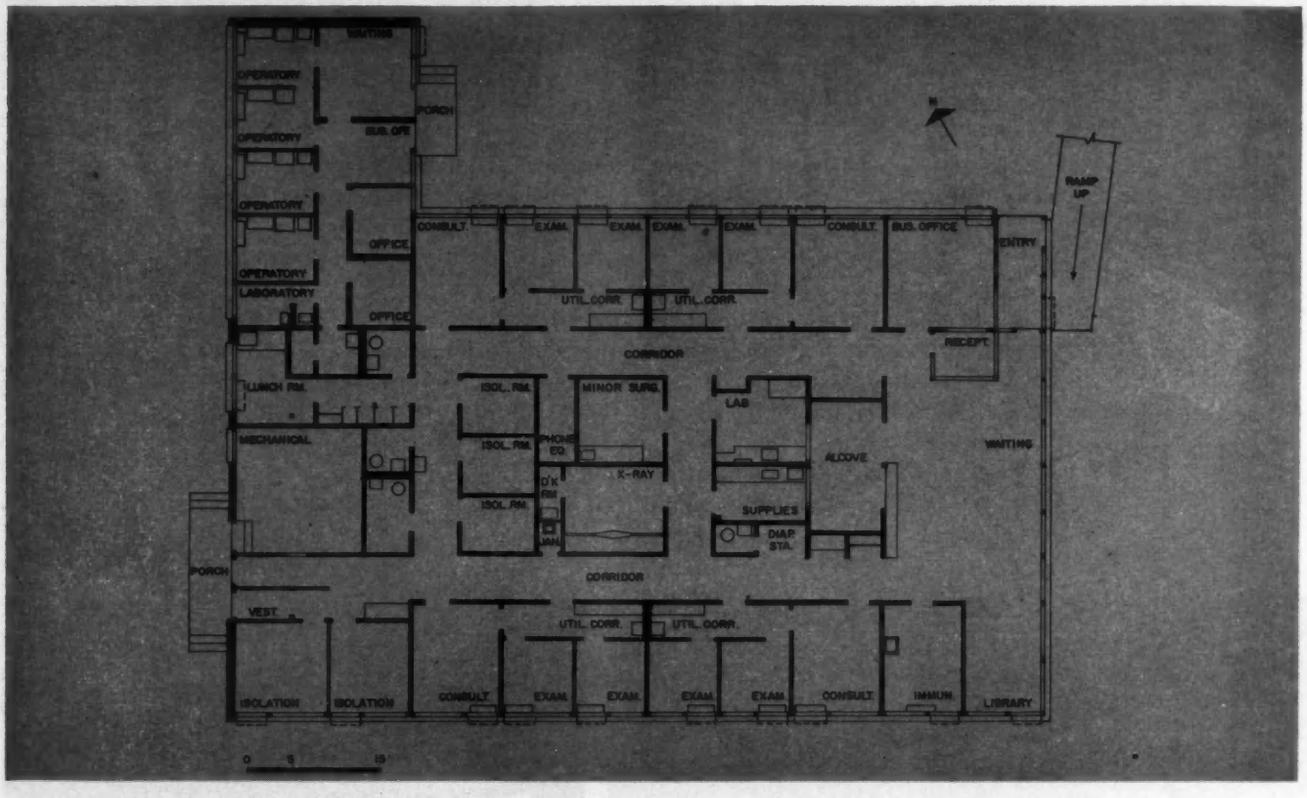
Dearborn-Massar





2. Children's Clinic
Dallas, Texas
Wiltshire and Fisher, Architects

PERHAPS the nicest thing about this children's clinic, though the architect doesn't mention it, is the scaling of the building for its small patients, plus the quiet sheltered note its roof lines achieve. The architect stresses three principal planning points: (1) the arrangement of the doctors' suites so that each has a sub-corridor connecting two examining rooms and private office, making it possible for the doctor to circulate without appearing in the public corridor; (2) a back waiting room for the reception of children with a temperature, where they can be kept isolated until a doctor has examined them for contagious disease; (3) the air conditioning system, which circulates hot or chilled water to individual cabinet units in the various rooms, making



Ulric Meisel

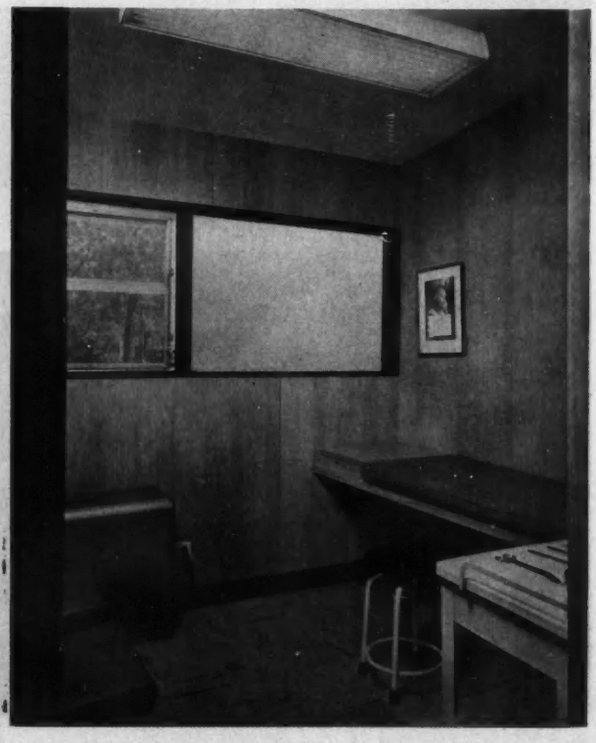
Children's Clinic, Dallas

it possible to control each room to the needs of unclothed children, if that should be advisable, rather than a set temperature which might be harsh for the sick child.

The building is occupied by four pediatricians and two pediodontists, the latter occupying the rear wing shown on the plan, with separate entrance. Each doctor in each group practices independently, but each has use of common facilities in the two sections of the building.

After the building had been in operation for a couple of years a questionnaire was circulated among the staff people which asked for recommended changes in case the building were to be rebuilt, but the results turned up only two minor suggestions for changes.

Ulric-Meisel

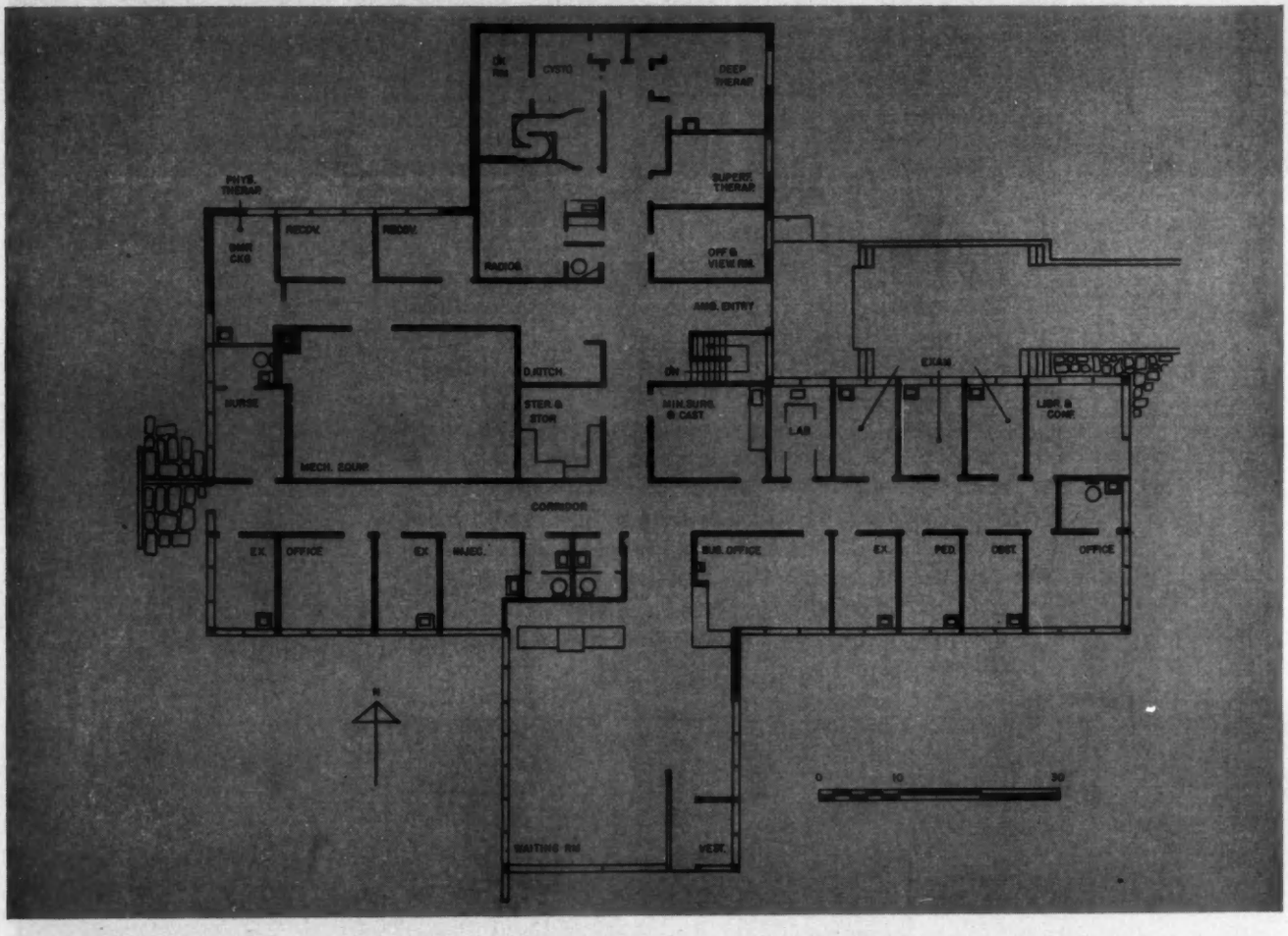


3. Dr. Clifford M. Bassett Clinic

Cushing, Oklahoma

Coston-Frankfurt-Short, Architects and Engineers

THOUGH a single doctor built this extensive office building, it was designed for an essentially staff operation with the addition of two or more doctors as assistants. The building probably sets some sort of record for its facilities and equipment. The X-ray installation runs to deep therapy; there is television in the waiting room; piped music; extensive signal system; full air conditioning; piped oxygen; not to mention the diet kitchen. Indeed the good doctor told the architects that he wanted to equal or surpass the facilities available to big-city doctors. Red brick and redwood give the building its main color scheme, though heavy use of tinted



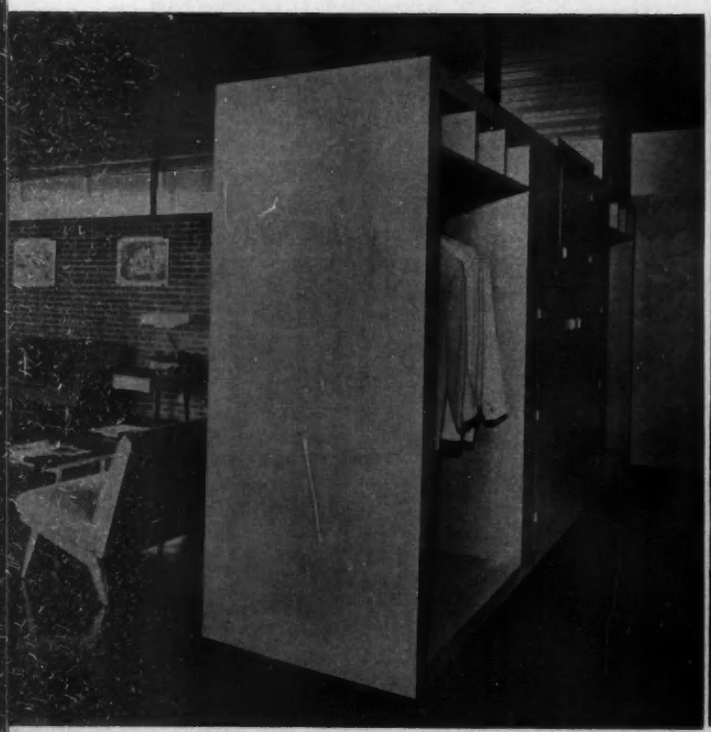
Julius Shulman

Bassett Clinic, Cushing, Okla.

glass produces some strong contrasts. Inside the color schemes are fairly lively, and according to the local newspaper, there is "modern art with just enough whimsy and humor to contribute toward mental therapy of patients."

Ceramic tile was used for all corridor walls; here the color is gray. In examining rooms, however, and generally throughout the interior, the colors are anything but "medical," with greens, suntan, blues and a cocoa brown for the fabric wall covering that has been extensively used in many of the rooms. Woodwork is mainly walnut, in blonde finish. Even the metal cabinets avoid the clinical white, with lively color schemes. All ceilings are of acoustic tile.

Julius Shulman

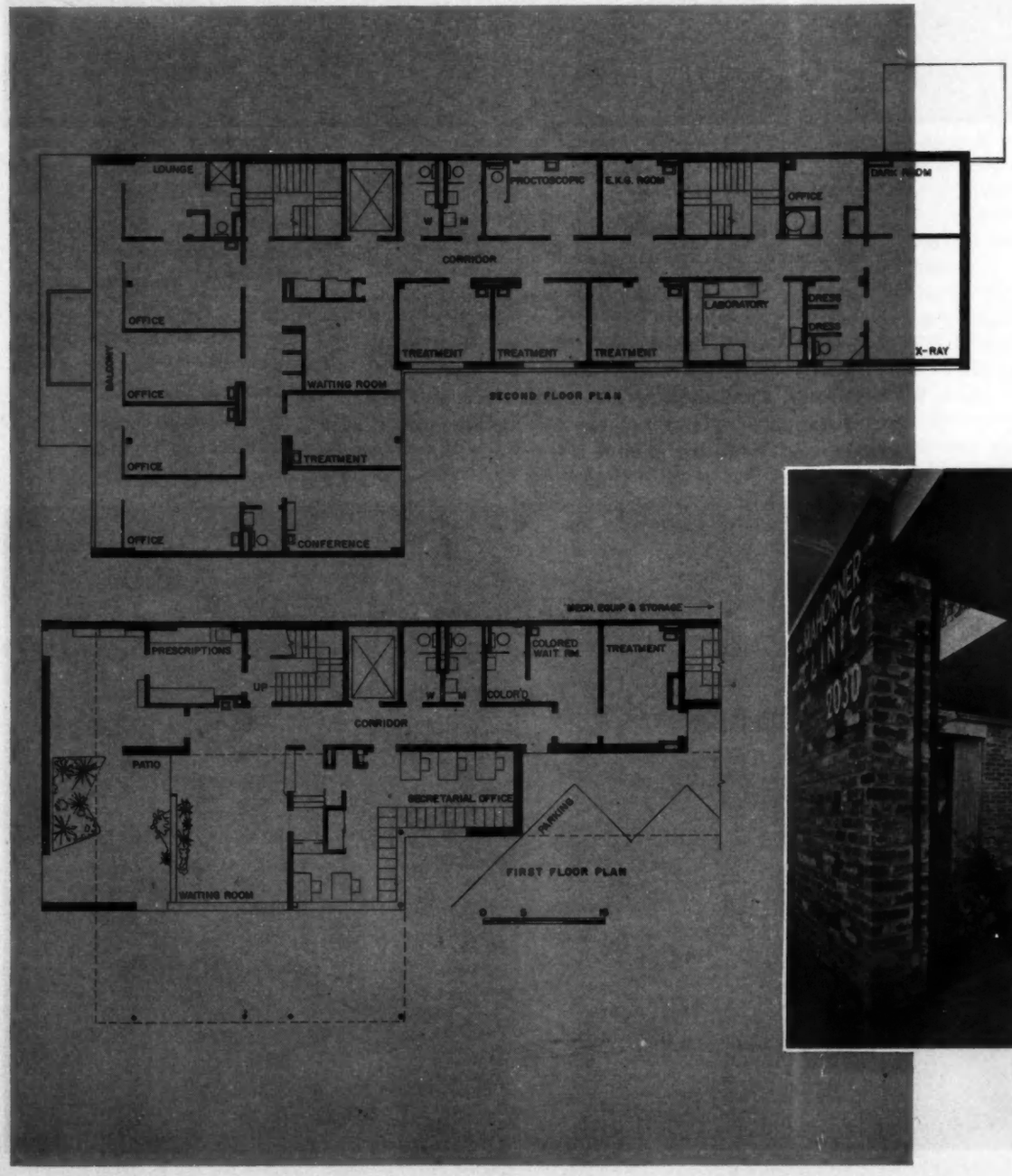


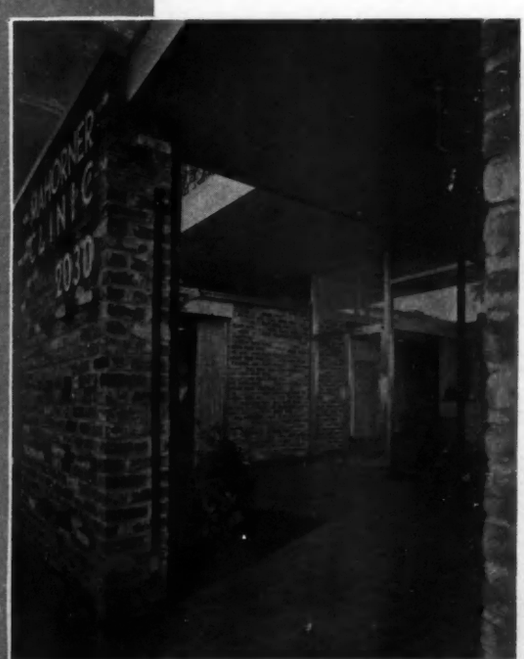
4. Mahorner Clinic

New Orleans, Louisiana

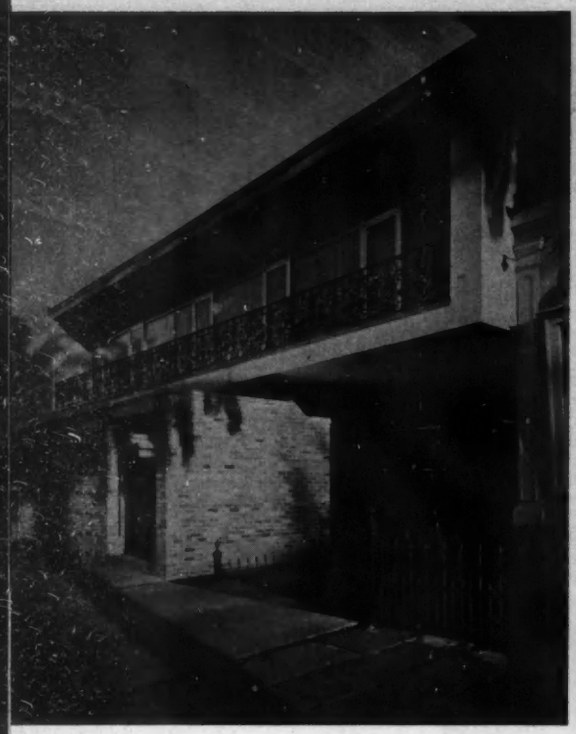
Curtis & Davis, Architects

IT HAS been said rather frequently of late that a few purely nostalgic touches in decoration might not be amiss, and it has been implied that architects who indulged in something of that sort would not be stricken from the favored lists, but it still is worthy of note when one does nerve himself to do it. As a matter of fact, these architects are inclined to point with pride to the little New Orleans patio in this building, and to the decorative wrought iron balcony railing, adding that this softening of their contemporary leanings has produced much favorable comment. The patio should be especially commendable for a doctors' clinic in a busy city neighborhood, establishing a note of calm and quiet, and the balcony "has proven very useful in our climate." However pleasant the shaded balcony, it probably proves useful in the strict functional sense, for





Joseph Molitor

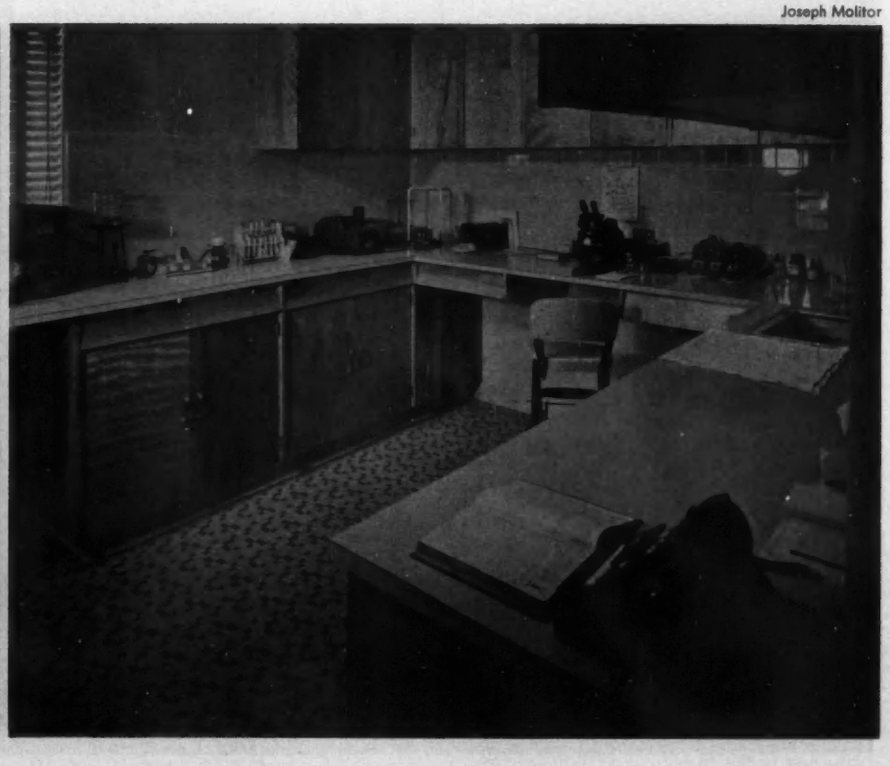


Mahorner Clinic, New Orleans

one can imagine the doctors using it as a private passage when some particularly garrulous client is known to be in the corridor.

The structural system consists of a rigid steel frame and bar joists. Roof and floor decks are lightweight concrete. Exterior walls are second-hand common brick, concrete block and stucco. The brick walls and slate floor of the patio extend into the waiting room on the ground floor. The entire building is fully air conditioned.

Joseph Molitor



APPLICATIONS OF PLASTICS IN BUILDING

By Albert G. H. Dietz*

In this sequel to his outline last April of the characteristics of plastics in building, Professor Dietz evaluates the specific applications of plastics and their relation to the more traditional building materials — in structural walls, floors and roofs, insulation and vapor barriers, illumination and daylighting, interior finishes, piping and ductwork, electrical and hardware components and forms for concrete. In many of these applications plastics are pretty generally accepted, but in others they are just beginning to overcome "architectural shyness." A rational consideration of costs, which are high initially but low when spread over the entire use life, will put plastics on a competitive plane with other building materials. And the facility with which they can be used will often be a balancing factor

* Professor of Building Engineering and Construction and Chairman, Plastics Committee, Massachusetts Institute of Technology, Cambridge, Mass.

PLASTICS, as they relate to building, are no different from what may be called the "more conventional" building materials in the degree to which they are influenced by the major trends in building. A corollary can also be stated: as these materials develop, they in turn have a definite effect on these building trends, either directly or indirectly.

The trends today include the increasing use of shop-fabricated units to reduce expensive field labor and erection time; large clear spans to permit the greatest possible freedom in the arrangement of space; open walls providing maximum daylighting and making use of lightweight curtain walls; and the markedly increased proportion of the total building budget devoted to mechanical and electrical equipment. They all offer opportunities for intelligent and imaginative use of plastics and at the same time delimit and set forth the requirements for those uses.

Costs. Plastics compete directly with other materials for the building dollar in many specific applications, such as insulation and daylighting. In others, such as formwork for concrete, they make possible new solutions to building problems and have properties not available in other materials. In any event, cost is a major consideration. Compared with wood, steel and concrete, the raw material cost of plastics per pound is not low. It ranges from perhaps 15 to 80 cents per pound for customarily used molding materials up to several dollars per pound for the expensive types. However, the low density of plastics, approximately half that of aluminum and double that of wood, makes a pound go much farther than many heavier construction materials. In order to be competitive though, the fabricated and installed cost of plastics parts must be comparable with other materials — unless, of course, the plastics have unique advantages.

The ready formability of many plastics often provides a competitive edge. Vacuum-forming equipment for thermoplastic sheets, and simple molds for reinforced plastic parts of considerable size are relatively inexpensive compared with the large presses and expensive dies required for metal forming.

Whatever the application, though, the relative merits and costs of plastics and other materials must be studied thoroughly. Fabrication methods for plastics are still evolving, and the field has hardly settled into a routine pattern. Costs consequently may range from perhaps 25 cents to several dollars per pound for finished pieces.

Maintenance. In any discussion of costs, the long-range factor must be considered as well as the initial material and installation costs. Plastics may very well offset high first costs by offering reduced maintenance costs. Examples are the superior mar and solvent resistance of the surfaces of high-pressure laminates; the toughness of vinyl floor and wall coverings; and the resistance to shatter hazard of acrylic or reinforced plastic sheet.

Codes. In a rapidly growing field like plastics, the legal provisions of building codes are bound to lag behind the building applications, with attendant demands on building code officials and boards of appeals to rule on numerous specific applications. Efforts are being made by the plastics industry on one hand and by building code groups on the other to find logical bases on which to write building code provisions and to find realistic practical tests to evaluate the various plastics, particularly with respect to flammability and fire spread. Organizations like the Building Officials Conference of America, the Pacific Coast Building Officials Conference and the National Board of Fire Underwriters; and cities like San Francisco and Los Angeles are formulating code provisions.

A good deal of mutual education between the plastics industry and the building industry is needed before each fully understands the requirements, capabilities and limitations of the other. In the meantime, imaginative but sensible uses of plastics will help to establish the fields of usefulness and the limitations of these new materials.

STRUCTURAL: WALLS, FLOORS, ROOFS

As direct replacements for wood, steel or concrete beams, joists, studs, arches or other familiar structural members, plastics have no present significant use, and such direct replacement seems unlikely to occur on any appreciable scale. The usual application of plastics is semi-structural. In this respect it combines enclosure, light transmission or both. Their most completely structural use is in combination with other materials.

The principal present structural or semi-structural application of plastics

Alsynite Company of America

"The structural function (of corrugated reinforced plastic sheets) is combined with enclosure and light transmission, often simultaneously meeting a shatter hazard as in industrial buildings."

Keller Products, Inc.

"All-plastic and light-transmitting sandwiches have been developed mostly for walls in which the load-carrying requirements have been combined with enclosure, decoration and resistance to the wear and exposure normal to walls."

Dow Chemical Co.

"Foamed polystyrene . . . has been used as an insulating back-up for concrete block walls, where it also formed the plaster base, thus eliminating furring, lath and vapor barrier."

is in so-called "sandwiches" and in corrugated sheets. In both these forms there is a combined function of structure and enclosure, and there may be light transmission as well. The relative importance of each function varies.

In sandwiches the role of plastics may range from that of a relatively minor constituent to sandwiches made completely of plastics. A few examples will illustrate:

1. *Completely plastic.* Reinforced plastic faces are bonded to foamed polystyrene cores with one of the high-strength, resin-based adhesives such as epoxy or resorcinol. If the faces are unpigmented and the adhesive is semi-transparent or transparent, some translucence in the sandwich is achieved. Faces are strong and tough, and the insulating value of the foamed core is the equivalent of other low-density foams and bulk insulating materials. The low permeability to vapor of the facings and of the polystyrene should act as a vapor barrier.

2. *Reinforced plastic faces with grid core.* One example of this construction utilizes interlocking, extruded aluminum rib sections faced with translucent reinforced plastic facings bonded to the grid with epoxy adhesives. The sandwich is highly translucent, showing the grid pattern of the opaque ribs when light shines through. In another example the core is honeycomb.

3. *High-pressure laminates with honeycomb core.* Decorative laminates of wood veneer or printed paper surfaces overlaid with melamine can be bonded with adhesives such as resorcinol and epoxy to honeycomb-shaped cores of paper impregnated with resin, usually phenolic, to provide strong, lightweight sandwich panels for partitions, doors, furniture tops and similar applications.

4. *Non-plastic faces with honeycomb cores.* Sandwiches with plywood, porcelain-enameled steel, aluminum and other non-plastic faces, resin-bonded to honeycomb cores, have found use in housing and commercial buildings. The plywood itself, if waterproof, is resin-bonded too.

Evidently many combinations can be developed. Among the materials which have been employed are hardboard faces with resin-based coatings such as phenolic, alkyd, epoxy and melamine; balsawood cores with the end grain perpendicular to the faces; high-pressure laminate sandwiches in which the core is a formed high-pressure laminate cellular structure; a variety of resin-impregnated-paper cellular arrangements for the core; plywood with phenolic resin-impregnated paper faces; and resin-bonded wood-waste cores. Many other combinations are possible.

All-plastic and light-transmitting sandwiches have been developed mostly for walls in which the load-carrying requirements have been combined with enclosure, decoration and resistance to the wear and exposures normal to walls. Light-transmitting sandwiches have also been used in roofs for top-lighting. Sandwiches for floors utilize plywood and other non-plastic materials for the relatively heavy facings required and resin-impregnated paper honeycomb for the cores.

Corrugated reinforced plastic sheets have become well known in building applications such as skylighting, roofing, sidelighting in industrial and other buildings, and as light-transmitting partitions. In roofs the structural requirements such as snow loads may be appreciable; in other applications the load-carrying requirements may be nominal. In any event the structural function is combined with enclosure and light transmission, often simultaneously meeting a shatter hazard as in industrial buildings. When the corrugated plastic sheets are integrated with corrugated metal or cement-asbestos board, they can be attached continuously with the other sheets, if the corrugations are the same, and require no special frame. The relatively high cost of the plastic sheet is thereby at least partially offset.

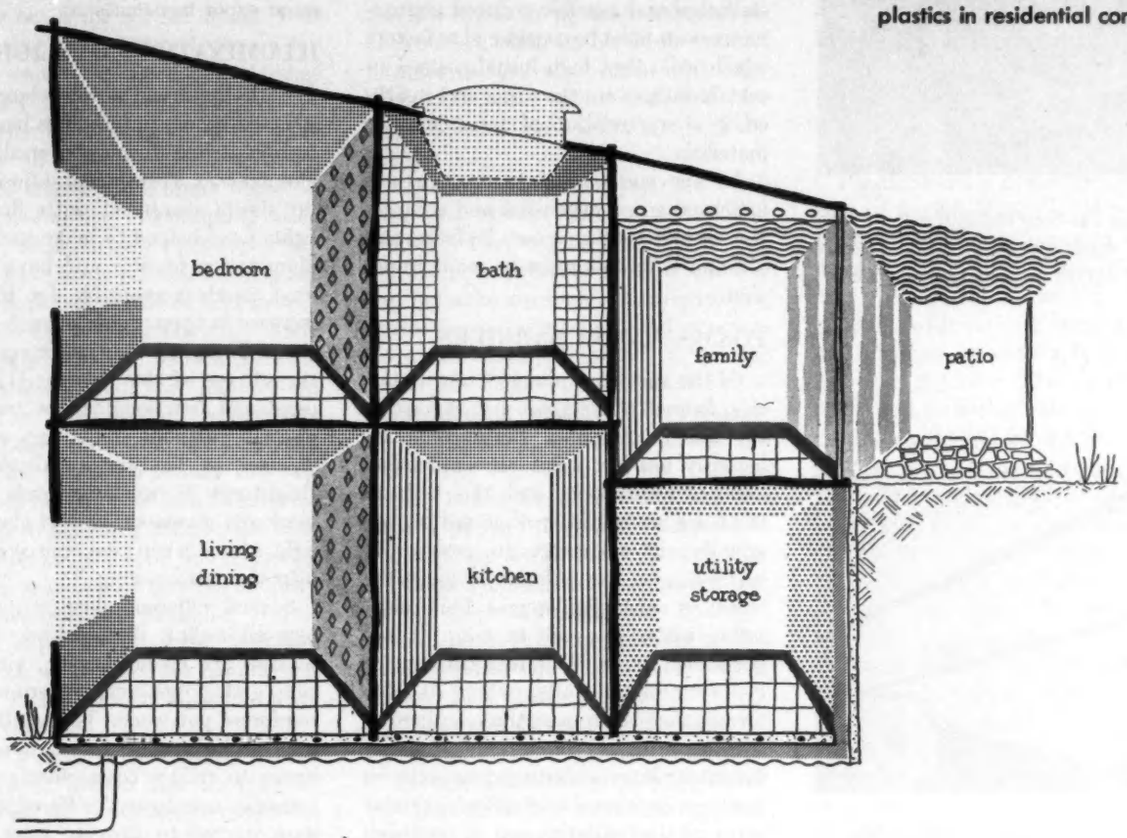
Use has been made of sprayed plastic film on the exteriors and roofs of buildings, utilizing a technique similar to the "mothballing" of naval vessels. Flexible vinyl chloride or its copolymers are usually employed. Pigmentation helps to reduce penetration and breakdown of the plastic by the sun's actinic rays.

A few roofing installations have employed acrylic emulsions incorporating chopped glass fibers, pigments and fine crushed stone. The acrylic is similar to that employed in transparent acrylic sheet for aircraft glazing, bubble-shaped skylights and similar exterior applications.

First costs of plastics sheets — flat, corrugated or incorporated into sandwiches — must be balanced against first and maintenance costs of other systems.

PLASTICS CAN PROVIDE STRUCTURE, SERVICES AND DECORATION

This is purely a hypothetical house, conceived simply to illustrate the possibilities of plastics in residential construction



CORRUGATED REINFORCED PLASTIC SHEETING

STRUCTURAL SANDWICH, TRANSLUCENT

STRUCTURAL SANDWICH, OPAQUE

HIGH-PRESSURE LAMINATES, EITHER SANDWICH FACING OR WALL COVERING

FOAMED POLYSTRENE INSULATION ON CONCRETE

POLYETHYLENE FILM (AS VAPOR BARRIER)

ACRYLIC SKYLIGHT AND ACRYLIC GLAZING

POLYSTRENE WALL TILE

VINYL WALL COVERING

RESIN-TREATED WALLPAPER

VINYL FLOORING

SPRAYED-ON PLASTIC COATING

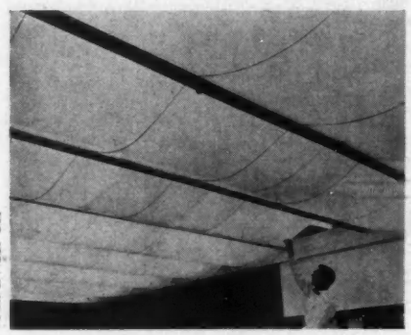
FLEXIBLE POLYETHYLENE PIPE IN CONCRETE SLAB (FOR RADIANT HEATING)

RIGID VINYL PIPE (FOR GAS LINE)

EXTRUDED PLASTIC ELECTRIC OUTLET STRIPS

The Viking Corp.

"Some use has been made of polyethylene film as a vapor barrier in walls and ceilings and under poured concrete slabs."



Rohm & Haas Co.

"One ingenious method (of ceiling illumination) is to allow thin sheets to hang in their natural catenary between ribs and to support them on fine chains hanging in the same catenary form."

Wasco Products Co.

"Vacuum-forming techniques . . . have made possible the popular bubble-shaped skylights of transparent or translucent acrylic."

At prices in the vicinity of $1 per square foot, the flat or corrugated reinforced plastic sheets are not inexpensive. Sandwiches may also be relatively costly on a square foot basis. However, ease of installation and possible reduced maintenance costs must be considered as factors which will offset high initial costs. Uncertain factors are the aging and weathering characteristics of some plastics materials.

As was pointed out in the previous article, thermal expansion and contraction of plastics sheets may be large, and allowance for this must be made in design.

FOAMS, VAPOR BARRIERS

Of the various available foamed plastics, foamed polystyrene has the greatest use in building. Polystyrene inherently has low water absorption and vapor transmission, and the cells in the foam are not interconnected; consequently, its resistance to passage of water is good. Its *K* factor is about the same as other lightweight bulk insulating materials, such as cork. It has been used as an insulating backup for concrete block walls, where it also formed the plaster base, thus eliminating furring, lath and vapor barrier; as an insulating layer under concrete slabs on grade; as perimeter insulation for similar slabs; as the insulating core in sandwich slabs with thin reinforced concrete faces; and as roof insulation. For a given installation the attractive insulating value, water resistance and resistance to decay must be balanced against cost of comparable materials. If exceptionally high temperatures are to be encountered, the thermoplastic may not be suitable.

The foamed-in-place plastics like the isocyanates have not been attractive in building because of high cost. However as production is increased, costs may be reduced to the point where building uses may develop. They can be rapidly foamed in place in difficult spots and help to support adjacent faces like thin metal or plastics. They are strong and tough in the rigid form, but are also made as soft, tough foams for upholstery, mattresses and cushions.

Some use has been made of polyethylene film as a vapor barrier in walls and ceilings and under poured concrete slabs. The flexibility of the film is helpful in installation. Again, cost must be compared with that of other vapor barriers.

As plastics costs decrease, other vapor barriers to be considered are plastic film carriers such as polyester coated with very thin aluminum foil. Exceptionally good toughness is combined with minimum vapor transmission.

ILLUMINATION, DAYLIGHTING

With the trend toward large unobstructed spaces in buildings has come a parallel trend toward over-all ceiling illumination. Translucent diffusing plastic sheets combined with fluorescent lights have helped to make such ceiling illumination feasible and have been at least partly responsible for the rapid increase in the number of such installations. There are two major reasons for the success of this system: (1) Equipment and functions can be rearranged at will without requiring extensive changes in lighting installations. (2) Brightness at working levels can be markedly increased without glare at the light source when that source is spread over the entire ceiling.

Several different plastics find use in over-all ceiling illumination. Thermoplastics are chiefly acrylic, vinyl chloride and polystyrene; thermosets are reinforced polyesters. To keep the thickness of plastic sheet to a minimum, and hence to reduce costs, sheets are customarily corrugated, coffered or otherwise shaped to provide strength and rigidity. One ingenious method is to allow thin sheets to hang in their natural catenary between ribs and to support them on fine chains hanging in the same catenary form.

On a per square foot basis, plastics used for over-all ceiling illumination are not inexpensive, but they make possible offsetting economies. The sheets are light, shatter-resistant and require only lightweight supports. The space above them can be utilized to run exposed ducts, conduits and other mechanical equipment at a cost much lower than if they had to be concealed. Sheets of plastic are easily moved aside to make the pipe and duct space readily available. They are also easily removable so that from time to time they can be cleaned of dust which accumulates on the upper surfaces. If they tend to creep and sag a little with time, they can be turned over occasionally when being cleaned. Lighting fixtures can be plain and utilitarian.

One argument advanced for the ther-

moplastic sheets is that sprinkler heads can be installed above them — economically and out of sight. The sheets will soften and fall if the air temperature becomes unduly high, thus exposing the sprinkler heads for normal action. It is claimed that thin plastic sheets are too light to cause any particular damage when they fall. Thermosetting sheets, on the other hand, do not have the same tendency to soften, and so sprinkler heads are best situated under them.

Vacuum-forming techniques, used originally to make aircraft canopies and blisters, have made possible the popular bubble-shaped skylights of transparent or translucent acrylic. They are easily and quickly installed; there are no obstructing bars; and the dome shape makes the thin plastic exceptionally strong. Edges are customarily covered with metal angles to reduce the ease with which fire can take hold. With some attention to fastening details, the bubbles can be made to pop out in case of explosion or increased internal air pressure. Bubble-shaped skylights are inherently expensive, but the ease and speed with which they are installed on the job make them competitive with other skylights.

Plastic glazing is customarily acrylic or reinforced plastic. Acrylic may be transparent or translucent; reinforced plastics are translucent. Plastic glazing is usually resorted to where resistance to breakage is more important than resistance to scratching or to crazing or fogging by chemical fumes.

The readiness with which sheet may be formed recommends its use in shapes other than flat, particularly if clear vision is not important. Heavy corrugations, for example, serve to make relatively thin sheets strong and stiff enough to span considerable distances. When the corrugations are horizontal, the upper outstanding portions of the corrugations may be made reflective to prevent excessive penetration by direct sunlight.

INTERIOR FINISHES

Plastics have a longer and more extensive history as interior finishes than as any other type of application. These finishes include wall and floor covering primarily, and to a lesser extent extruded moldings and trim.

Wall coverings are exemplified by high-pressure decorative laminates, wall tile, flexible film and sheet and sprayed-on coatings. High-pressure laminates, in spite of their relatively high cost, find extensive use where resistance to wear and tear is particularly important, as on corridor walls in public buildings and enclosures around baths. Resin-finished hardboards are also extensively employed. As is true of any wallboard, care must be taken to protect and seal the edges.

Injection-molded polystyrene wall tiles are widely used in baths and kitchens. They are usually made in sizes and shapes similar to familiar ceramic tile, but some are made with interlocking edges for self-alignment and spacing. Tiles are usually cemented to plaster walls. The quality of the installation is therefore highly dependent on the quality of the bond, watertightness of the joints and resistance of the back-up surface to any moisture which may find its way through the joints. Many colors and textures are produced, but surface hardness is inferior to that of glazed tile. Fumes generally found in buildings should have little or no effect, but chemical-industrial fumes and certain cleaners may attack the plastic.

Plastic wall tiles are usually lower in installed cost than ceramic tile because of the lightness of the supporting structure and the ease with which they are applied. A commercial standard on polystyrene wall tile has recently been promulgated through the Department of Commerce as one of its series of Commercial Standards on building and other products.

Flexible film and sheet cemented directly to walls, much like wallpaper, are increasingly popular. Vinyl chloride and its copolymers are favored. In some instances the pattern and color are formed on the back of a thick, tough, transparent film which therefore protects the decorative layer from harm. Most applications are in areas where resistance to hard wear is desired or where the rich figure and color available recommend the plastic. In another wall application, standard wallpapers can be made stain-resistant by a thin resinous surface treatment.

Tough, wear-resistant surfaces are also provided by vinyl chloride and copolymers made into solution and sprayed directly onto walls. The solution has been sprayed on concrete, plaster, stucco, metal and other surfaces, both exterior and interior. Its ability to conform to difficult shapes is an especial advantage.

In comparison with painted surfaces and untreated wallpapers, vinyl film and sheet, sprayed vinyls and resinous-surfaced wallpapers are definitely more costly. However, the increased cost can be balanced against reduced maintenance and longer life to justify their selection.

Plastic flooring in the form of tile or rolls of flexible sheet is widely used in building. Wear resistance and toughness have been amply demonstrated. Flooring may be full-thick, usually of vinyl chloride, with varying amounts of filler and pigment, or it may be a thin surface on a felt base. Many patterns and forms are available. If necessary, the thermoplastic can be heated and bent into coves or around nosings, but with the more rigid types the installation must be carefully executed to avoid immediate or subsequent cracking. Costs of plastic flooring are in the same range as other comparable tile and sheet materials.

Thermoplastics, like the cellulosics, polystyrene and the vinyls, are easily extruded into architectural trim of almost limitless color ranges. The cellulosics, because of their toughness, have been favored for such items of trim as table and counter edgings.

PIPING, DUCTWORK

Both flexible pipe, especially polyethylene, and rigid pipe, exemplified by unplasticized vinyl chloride, are finding increasing use in buildings. Cellulose acetate-butyrate is widely used as gas pipe, especially buried in the ground. Industrial pipe also includes glass fiber-reinforced rigid pipe, phenolic based pipe and tubing, and plastic-lined pipe, such as vinylidene chloride-lined steel pipe. Polyethylene is largely confined to cold water lines if it is not restrained, especially water-supply lines from street to house. It has also been used buried in concrete both for radiant heating and for refrigeration in skating rinks. Thermal conductivity through the pipe wall is less than through metal, but flexibility and ease of installation coupled with corrosion resistance recommend it.

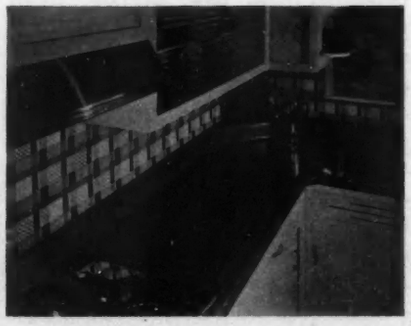
Costs per foot of pipe are in some instances higher and in others lower than metal pipe. Installation cost of flexible pipe is usually moderate. Installation

Bolta Products

"Flexible film and sheet cemented directly to walls, much like wallpaper, are increasingly popular."

Eastman Chemical Products, Inc.

"Plastic ducts have found use where corrosive fumes are to be carried off."



Formica Co.

"Thermoplastics, like the cellulosics, polystyrene and the vinyls, are easily formed into architectural surfaces and trim."

cost of rigid pipe with threaded couplings should be comparable to similar metal pipe once workmen become familiar with it. Plastic pipes and tubing are likely to require more supports than their metal counterparts, especially if they are used at elevated temperatures.

Plastic ducts have found use where corrosive fumes are to be carried off. Here rigid vinyl chloride has had successful use. The higher cost and more difficult installation are more than offset by the greatly increased service life.

For highly corrosive conditions, such as are found in chemical plants, the fluorinated plastics are favored for piping, valve lining, gaskets, and similar parts. They are particularly effective at elevated temperatures ranging to 450 F or sometimes higher.

ELECTRICAL AND HARDWARE COMPONENTS

Manufacturers of electrical equipment have long used plastics for insulation in a large variety of parts. Vinyls and other plastics are extruded as color-code insulation on wire; punchings of high-pressure laminates form a myriad of insulating layers in switches and similar parts; molded plastic switch plates and plugs are familiar in buildings. In illumination, transparent and translucent plastics, plain, reinforced, and with decorative inlays such as grass and butterflies, are commonly employed. Recently continuous outlet strips have appeared with copper conductors molded into extruded plastics. Electrical contact can be made by plugging in at any point, usually by means of a separate molded unit into which a standard pronged plug can be inserted.

Molded plastics items are becoming increasingly common in hardware. Familiar components are knobs, pulls and buttons of phenolic and cellulosics. Molded nylon is being used increasingly for small bearings, rollers, parts of latches and for other purposes where toughness and wear resistance coupled with minimum noise are desirable.

FORMS

The fluidity of architectural and engineering structures inherently possible in concrete is often not fully utilized because of the cost of forms. Slabs are used instead of ribs; when ribs are used, they are rectangular grids instead of the patterns demanded by loads and stresses; and efficient curved shapes are avoided because of the cost of forming. These limitations can be overcome to a degree by imaginative use of reinforced plastics, which can be given relatively complex shapes by fairly simple means and are inherently tough enough to allow for a number of re-uses if handled properly. The relatively high cost per pound might, therefore, be spread over a sufficient number of re-uses to make them economical. Also, the more efficient concrete structures made possible by their use could result in an over-all reduction in cost. This field is almost entirely unexplored, but it looks promising.

TRENDS

As plastics become more familiar in building, some of the present uses may be expected to increase as they prove their worth, while others will disappear. New uses undoubtedly will develop as the plastics field itself unfolds and as the ingenuity of architects, engineers and builders evolves new applications.

One new type of enclosure which may find use in building is a dome-shaped housing originally developed for large radar installations. It consists basically of a triangular network of framing members supporting an enclosing skin. The entire structure is reinforced plastic. Prototypes have withstood hurricanes as well as the high winds and cold weather found on Mt. Washington.

The perennially vexing problem of gasketing for exterior wall panels may be assisted by silicone rubber, especially if the cost of this material is reduced. Its proved durability and ability to retain flexibility under temperature extremes far more severe than those met in building structures recommend it for this purpose. Experimental installations have been highly successful.

In an effort to determine how plastics might fit into dwelling house design, a continuing evaluation is in progress at the Massachusetts Institute of Technology under a project sponsored by the Monsanto Chemical Co. By studies such as this, by experimentation and judicious use in buildings, by growing awareness of their potentialities and limitations, plastics will find their place in building together with already established materials of construction and will thereby extend the range of media at the disposal of architects, engineers and builders.

HOMES CAN NOW HAVE THIN, SMALL MARBLE TILES IN 18 VARIETIES FOR WALLS AND FLOORS

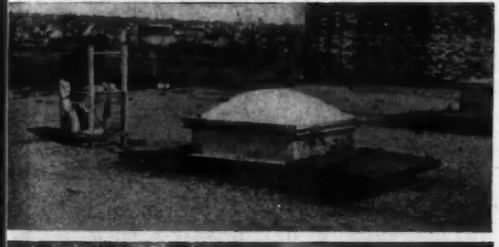
Marble wall and floor tile, called *MARKWA*, is being produced in thin, small units for home installation at prices which are said to be competitive with other fine tiles. It is cut from first quality marble to a thickness of just ½ in. and is fabricated in the following three sizes: 8 in. square, 12 in. square and 8 by 12 in.

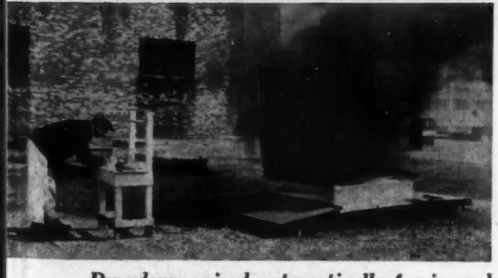
The current line of MARKWA wall and floor tiles includes 18 different marbles. Before this line was established, studies were made of the color trends in decorating, home furnishings, kitchen appliances and bathroom fixtures, so that the best marbles in color and pattern would be selected from the 250 kinds currently being quarried. Aside from its beauty, MARKWA has other natural qualities which the manufacturer claims make it an economical material: it is fireproof, aseptic, easy to keep clean and eliminates such maintenance costs as repainting or repapering.

MARKWA wall tile has a polished finish and is furnished with cushion edges. MARKWA floor tile has a matte finish and is furnished with square edges, although cushion edges can be ordered specially. The tile can be applied with adhesive over painted plaster walls, plywood, cement or concrete walls or floors, or with mortar over any uniform concrete, masonry, cinder block or similar construction. *Vermont Marble Co., Proctor, Vt.*

Tile is pressed into adhesive and twisted into place; spaced with string. Joints are filled with cement and water spread on by hand

WASCOLITE PYRODOME SKYLIGHT APPROVED BY FACTORY MUTUAL LABORATORIES





Pyrodome raised automatically 1 min and 33 sec after start of the test fire

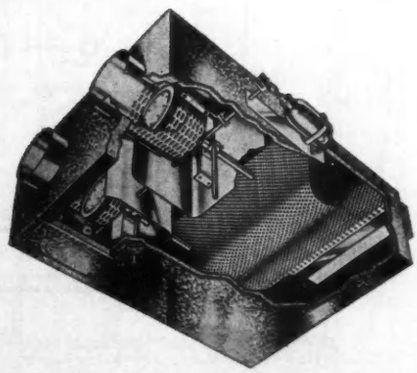
The new Wascolite Pyrodome, the skylight which opens automatically to vent fires through the roof, has been proved effective in tests conducted at the Factory Mutual Laboratories in Norwood, Mass. According to Norman J. Thompson, director of the Laboratories, "Automatic heat vents can effectively delay the build-up of heat, smoke and gases within a building, thus enabling manual fire-fighting methods to be carried on for a substantially longer period than would be possible without fire vents."

The three major objectives which the manufacturer claims for automatic roof venting by the Pyrodome are (1) it checks the spread of the fire, (2) it allows fire-fighters to see and locate the heart of the fire, and (3) it dramatically reduces the risk of asphyxiation. When fires break out in food processing, textile manufacturing and similar types of plants, expulsion of smoke and gases as quickly as possible reduces the chance of contamination.

The Pyrodome, like other Wasco skylighting products, is a prefabricated unit. When excessive heat occurs, a fusible link snaps, activating a lifting mechanism which automatically raises the dome. Thus heat, smoke and gases escape through the roof, and the fire is localized in the same manner as an ordinary fireplace. In an installation where light from the plastic dome is not desired, the Pyrovent, with an insulated aluminum cover, can be used. *Wasco Products, Inc., Bay State Rd., Cambridge 38, Mass.*

DUAL DUCT AIR DIFFUSER TRANSMITS HOT AND COLD AIR AT HIGH PRESSURE

A dual duct air diffuser for high pressure air transmission mixes hot and cold air to control temperature and maintains uniform air delivery under all operating conditions. The two air inlets are fitted with dampers which consist of double perforated concentric sleeves and felt-edged pistons. The outer sleeves slide over the fixed inner sleeves, governing the size of the holes through which the air flows. A thermostat-actuated motor controls the movement, so that the size of the holes in one damper increases in the same ratio as those in the other decrease, thus proportioning hot and cold air and controlling final temperature. Sound levels range from 32 to 45 decibels, depending on the size and type unit selected for a particular pressure and air delivery. The Connor Kno-Draft Dual Duct Diffuser is made in capacities up to 1000 cfm, operating at static pressures up to 6 in. w.g. Complete data is contained in Bulletin K-33. (See discussion of high-pressure air transmission in AE Roundup, pages 200 and 201). *Connor Engineering Corp., 500 Fifth Ave., New York 36, N. Y.*



(Continued on page 233)

HIGH-PRESSURE/HIGH-VELOCITY AIR SYSTEMS SUPPLY TWO

Individual room temperature control, flexible interior planning and a minimum of duct space and therefore more usable office space are possible in two large office buildings in New York City. The building feature which makes these advantages possible is the heating and cooling system, which operates on the principle of high-pressure air transmission. Very simply, it is a method by which air is moved at high velocities from both central heating and central cooling sources and is delivered at high temperature differentials for mixing at control boxes. These lead to either ventilation outlets or branch ducts supplying complete zones. Adequate static pressure is maintained at the air outlets so that there will be no problem in adjusting for the desired amount of air delivery.

The high-pressure system of air transmission is becoming more widely recognized today as a practical installation, especially in multi-story buildings in which flexibility of interior arrangement is desired, for the following reasons:

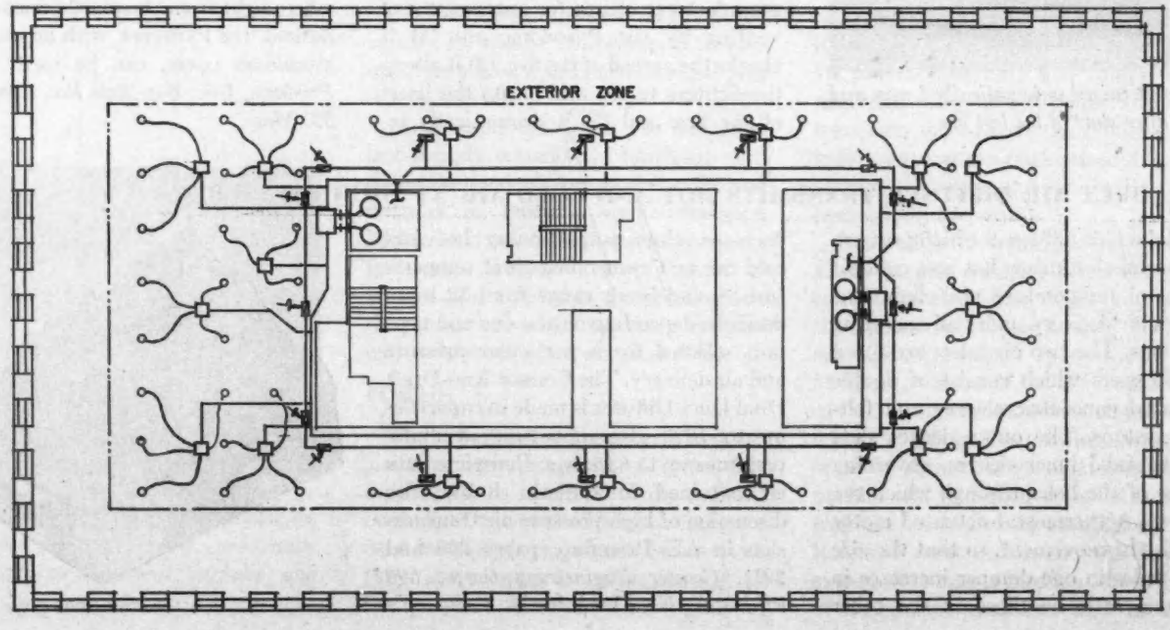
1. Small ducts can be used for transmission of air at high pressures. The amount of space allotted to air ducts can therefore be reduced, with a consequent reduction in building costs.
2. Small, flexible branch ducts to points of air delivery can be relocated easily, thus facilitating anticipated rearrangements of interiors.
3. Individual room controls or zone controls activate dampers which regulate the amount and temperature of air input, so that each room can have the temperature it requires.
4. The high pressure provides excess capacity and so makes possible tap-offs from main or branch ducts, without appreciable decrease in efficiency, to permit a concentration of cooling effect in one area.

A high-pressure system is naturally going to be a source of noise as well as air. This is obvious when it is considered that a typical high-pressure system sends air through trunk ducts at around 4000 fpm, slowing down to 3000 fpm in branch ducts — and this is still pretty fast delivery. Sound traps and special damper mechanisms in most systems absorb a major part of the delivery noise, so that it is usually not any more noticeable than it would be in a low-pressure system.

The Socony Mobil Building, Manhattan's block-square, 42-story skyscraper, will not only be the largest building in the world to be completely air-conditioned, it will also be one of the first big buildings in New York in which a high-pressure system is installed. Air delivery will be through two separate zone systems.

In the exterior zone, or periphery, a combination water-air system will be used. Air will be delivered at high velocities through induction-type window units, thus creating a vacuum to induce room air around heating-cooling water coils. Double duct risers will supply hot and cold air to control boxes for mixing on each floor, and from there a single duct system will carry the mixed air to the window units. The projected combination of high-pressure air supply and water supply to heating-cooling coils is as follows: in summer — cool air, cool water; in winter — cool air, hot water; in intermediate seasons — hot air, cool water.

The interior system will be strictly



Socony Mobil Building

Seaman's Bank for Savings

OFFICE BUILDINGS

an air system. Air will be delivered through double ducts at both east and west ends of the building and then mixed. Single branch ducts will take the air to high-pressure damper and acoustic control boxes, which will supply the ceiling diffusers in each bay. The thermostatically controlled dampers for controlling the volume of air in each bay can be operated either automatically or manually.

In the Socony Mobil installation not only will the small-size ducts reduce the space required for the system, but the concentration of most air conditioning equipment into three areas will also save much valuable rentable space and maintenance costs. Three centrifugal machines with 2500 tons of capacity will be located in the sub-basement to serve all areas from that point to the 15th floor. The smallest of these three units, of 500 tons, will be used during "off-peak" hours, thus effecting savings which would not be possible if one large unit had to be operated. One of the three compressor drives will utilize an "extraction" type turbine, from which exhaust steam will be piped up to the roof, where it will operate three absorption-type machines with 1500 tons capacity. They will serve the tower section, which rises from the 15th floor. This double use of steam will reduce condenser and water costs considerably and save on steam consumption. The fans will be located in the sub-basement, on the eighth floor and in the penthouse.

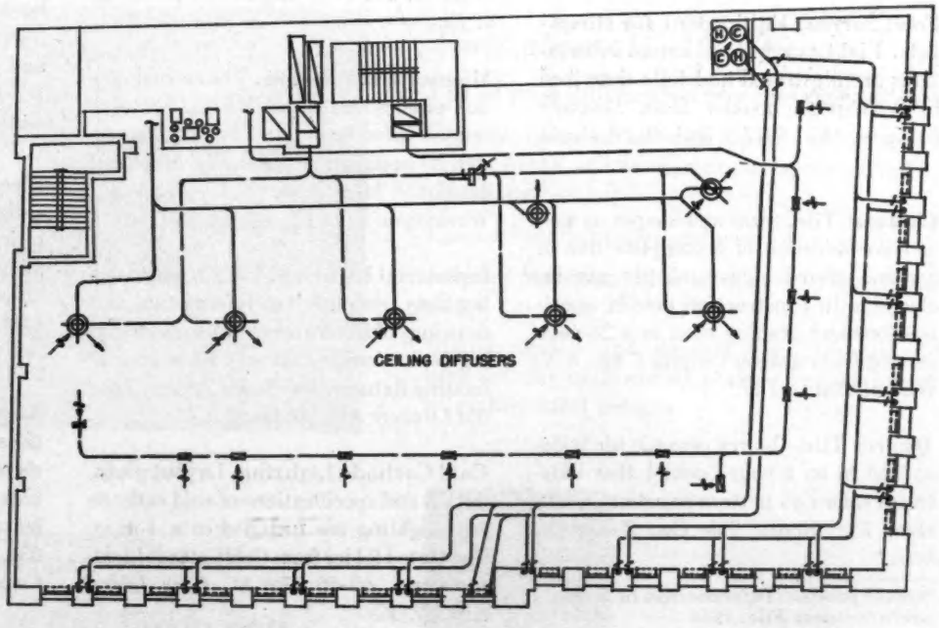
Harrison & Abramovitz are architects of the Socony Mobil Building, with John B. Peterkin associate. Jaros, Baum & Bolles are the consulting engineers.

The Seaman's Bank for Savings in downtown Manhattan, completed last spring, was the first building of any size in New York City in which a high-pressure system has been installed. Two systems are used, as in the Socony Mobil Building. However, the exterior is supplied solely by high-pressure air, while the interior uses a standard low-pressure air system.

Two sets of double ducts on the roof deliver hot and cold air to double duct risers, from which tap-offs carry the air to window units at sill level on the periphery. The tap-offs from these double ducts serve all floors, in various combinations, from the second up to the twelfth. Thermostatic controls activate dampers in the blender units to provide the proper mixture of hot and cold air. Any area of the building can be cooled at any time while another is being heated. In the interior of the building a standard low-pressure air supply is delivered to ceiling outlets.

Four big primary fan installations are located on the roof, two to supply the exterior ducts and two to supply the interior ducts. Heating and cooling coils near the roof fans provide all the heat and refrigeration for the system. Refrigeration costs are saved by using outside air for cooling when the air is below room temperature. Air is exhausted from the periphery through standard grilles and from the interior through combination supply-exhaust diffusers. It is either "tossed overboard" by the exhaust fan on the roof or recirculated through the filter and down through the supply ducts.

Halsey, McCormack and Helmer, Inc., New York, were the architects. Edward E. Ashley, consulting engineer, designed the air system. General contractor was the William L. Crow Construction Co.



***In Socony Mobil Building** typical tower floor (left), induction-type window units are supplied with primary high-pressure air from central control boxes and with secondary water. In the interior zone double ducts at east and west ends of building deliver hot and cold air through fire dampers and automatic load dampers for mixing; then single ducts take air to control boxes in each bay which supply ceiling diffusers through flexible ducts*

***In Seaman's Bank** typical floor (right), double ducts supply hot and cold air to branch ducts feeding to window units, where air is blended. Interior system is standard low pressure. Low pressure supply and exhaust and other services are in upper left*

BUSINESS INTERIORS

Air conditioning is only one of the many facets of efficient business interiors discussed in a 22-page, amusingly illustrated booklet. Other subjects covered include rent, labor, lighting, color, sound control and special equipment for office, store and showroom. *S.S. Silver Interiors, 350 Butler St., Brooklyn 17, N. Y.*

Light Control Draperies. *Luxout* draperies for controlling daylight are described in a booklet that includes color samples of the plastic fabric from which they are made. *Plastic Products, Inc., Richmond, Va.*

Electric Heat. Specifications, detail drawings and installation data are included in a description of electric baseboard and wall heaters. 12 pp, illus. *Cavalier Corp., Chattanooga 2, Tenn.*

Water Heaters. A new line of propeller fan unit heaters for both steam and hot water are described in a 24-page brochure that lists the capacities and includes wiring and piping diagrams. *Warren Webster & Co., Camden 5, N. J.*

Plastic Sheeting. *Plastispray* sprayed-on vinyl plastic sheeting is described with illustrations of its applications in a 4-page folder from *Liquid Plastics Corp., 50–02 23rd St., Long Island City 1, N. Y.*

Food Serving Equipment for Hospitals. Eight examples of actual installations are illustrated and fully described in a 32-page booklet from *Southern Equipment Co., 5017 S. 38th St., St. Louis, Mo.*

Ceramic Tile. Sizes and shapes as well as color selection of a complete line of ceramic glazed structural tile are included with construction details, specifications and grading rules in a 28-page catalog from *Arketex Ceramic Corp., 6 N. Walnut, Brazil, Ind.**

Quarry Tile. Quarry ceramic tile is described in an 8-page booklet that illustrates color and pattern selections available. *The Mosaic Tile Co., Zanesville, Ohio.**

Other product information in Sweet's Architectural File, 1955

Steel Windows. Tables of sizes and types, specifications, installation details, section details and information on accessories for projected, awning, casement and combination windows as well as detention and psychiatric windows are given in a 40-page booklet from *Detroit Steel Products Co., 3113 Griffin St., Detroit 11, Mich.**

Insulating Glass. A 28-page booklet illustrated with detail drawings compares the effectiveness of single, double and triple glazing on retarding winter heat loss and summer heat gain, their light and solar radiation transmittances and surface condensation points. *Libbey-Owens-Ford Glass Co., 608 Madison Ave., Toledo 3, Ohio.**

Doors. A 12-page brochure deals in detail with nine types of solid-core flush doors and gives specific information on the construction as well as recommended specifications. *Architectural Woodwork Institute, 332 S. Michigan Ave., Chicago 4, Ill.*

Magnesia Insulation. The second edition of *85% Magnesia Manual* contains revised information and illustrations as well as application data. *The Magnesia Insulation Mfrs. Assoc., 1317 F St., N.W., Washington 4, D. C.*

Industrial Lighting. Details, engineering data, construction information and drawings of fixture accessories and hanging devices cover a line of CFI industrial lighting fixtures. *DayBrite Lighting, Inc., 5411 Bulwer Ave., St. Louis 7, Mo.**

Cold Cathode Lighting. Layout plans, details and specifications of cold cathode cove lighting are included in a 4-page, illustrated folder from *Cold Cathode Lighting Corp., 42–40 27th St., Long Island City, N. Y.*

Sound Insulation. Complete information on sound insulating double partitions, including specifications and detail drawings, is offered in a 4-page folder available from the *Metal Lath Mfrs. Assoc., Engineers Bldg., Cleveland 14, Ohio.**

Acoustical Plastic. Physical data, standard specifications for manual and machine application and fire ratings of vermiculite acoustical plastic are given in an 8-page booklet from the *Vermiculite Institute, 208 S. LaSalle St., Chicago 4, Ill.*

Vibration Control. A selection chart showing recommended and alternate methods of isolation for various machinery is included in a 4-page folder describing and illustrating vibration isolation units. *The Korfund Co., Inc., 48–08A 32nd Pl., Long Island City 1, N. Y.**

Circuit Breakers. A 60-page reference book includes specifications, detail drawings and application data for molded case and enclosed large air circuit breakers. *I-T-E Circuit Breaker Co., 19th and Hamilton Sts., Philadelphia 30, Pa.*

Fire Protection Equipment. Specifications, line drawings and cross indexing of interior fire protection equipment for all types of buildings are included in a 40-page booklet available from the *Elkhart Brass Mfg. Co., 1302 West Beardsley Ave., Elkhart, Ind.**

Air Conditioning Systems. Advice on the selection of equipment and an analysis of proper home design for most effective and economical air conditioning are features of a 16-page, illustrated booklet. 25¢. *U. S. Air Conditioning Corp., 3211 Como Ave., S.E., Minneapolis 14, Minn.**

(Continued on page 260)

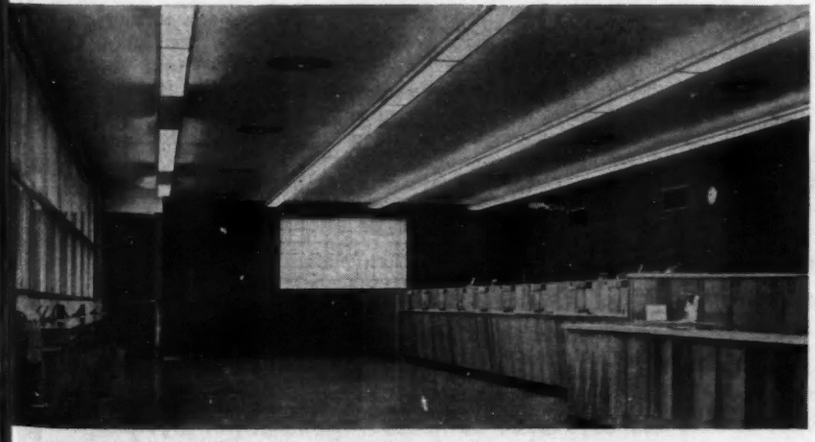
See how All-Air High Velocity units

lower the roof

The National Bank of Detroit, which is equipped with an Anemostat All-Air High Velocity distribution system.

This photograph shows the high velocity ducts installed *through* the open web joists. Note how the Anemostat sound attenuation unit is also placed *inside* the open web joist area. As a result, the architects and engineers were able to save *nearly two feet in a one-story building* . . . also make comparable savings in construction costs.

Completed interior with the Anemostat High Velocity units installed in the ceiling.



Facts about All-Air HV units

- Can be used with smaller than conventional ducts.
- Can be installed through open web joists (as shown here) and in many other space-saving applications.
- Can be installed faster and with less cost.
- Require no coils, thus eliminate clogging and odors.
- Round, square and straight line diffusers with high velocity units are adaptable to a wide variety of architectural designs.

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- *Engineer:* F. A. SANDO
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• ***For latest data on All-Air High Velocity units,*** write on your business letterhead for *new Selection Manual 50* to Anemostat Corporation of America, 10 E. 39 Street, New York 16, New York.

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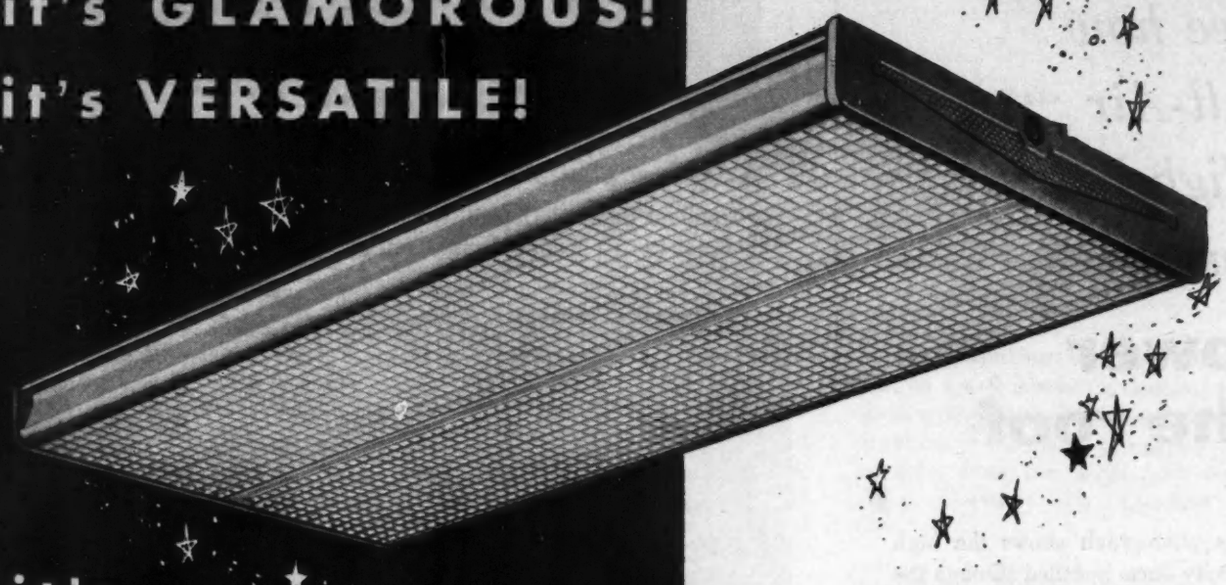

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USEFUL CURVES AND CURVED SURFACES—1

By Seymour Howard

Assistant Professor Pratt Institute, Architect associated with Huson Jackson and Harold Edelman

The forms most suitable for the solution of many structural problems require facility in drawing and using curves. Many good designs have never been carried out because information has not been readily available on curve characteristics and methods for laying them out. These and subsequent sheets will provide such information, not only on the familiar curves, but also on curves used for geodesic surfaces and thin shells.

Simple, direct methods exist for drawing some curves. Most, however, require the setting of points by calculation or by geometrical construction. Great care must be taken in connecting the points to obtain a "fair" curve.

A fair curve is one in which there are no local undesired irregularities. The easiest way to judge fairness is to look along the curve as nearly as possible in the plane of the curve.

When a large number of similar curves must be drawn it is economical to use special machines.

Plastic or wooden templates are available in many types for joining points in a smooth curve. Sets of railroad curves are arcs of circles of varying radii and different arc lengths. Copenhagen ship curves are based on the most usual curves found in hull design. Small circle and ellipse templates are often an aid in drafting. Parabolic templates would be a great help for making structural analysis drawings. The usual French curves can be manipulated to join points by smooth curves, but they must be used carefully when they do not fit the curve exactly.

For drawing curves which do not lend themselves to simple mathematical analysis, the best method is to use wood splines or battens, held in position by lead weights called ducks.

It is not always necessary or desirable that a curve be one for which a simple equation can be written. The curves which determine the shape of a ship's hull, for example, are developed by eye on the basis of experiment and past experience.

Curves developed purely by drawing should be drawn on a material unaffected by changes in temperature or humidity, or the temperature and humidity should be kept constant in the drawing room. Marble slabs are sometimes used. If paper must be used, check points or grid lines can be marked for subsequent verification.

Such curves can be reproduced by measuring offsets from a baseline or preferably from the nearest gridline. Once a table of offsets has been made the curve can be redrawn easily at any time and at any scale.

Remarks on Curves Included

Each curve on the following sheets is accurately drawn, and its most characteristic relationships are shown. In architectural design and layout, direct geometrical methods of constructing the curve and finding tangents, etc. are the most useful and are shown where possible. For use in checking points and for engineering calculations the formulas may be more useful.

The *standard form* of the equation of a curve is one based on rectangular Cartesian coördinates in which the y ordinates are given as a function of the x intercepts. It is the form most often used in the building field.

The *parametric* equation is also based on rectangular coordinates but both the y ordinates and the x intercepts are expressed in terms of a third variable. (Such as $x = a \cos t$; $y = b \sin t$.)

The *polar equation* of a curve gives points as measured along a line from a central point or pole. The distance from the pole is expressed as a function of the angle between the base line and the line along which the distance is measured. Curves such as spirals are best given in this form.

In field layout the polar equation can be used to find points on a curve by chaining out from a centrally located transit, measuring off angles from a base line.

Tangents and normals to a curve at various points are necessary in order to work out neatly the intersections of straight lines or curves with the particular curve under consideration. The tangent and normal at any point on a curved structure such as an arch or a shell also give the directions along which forces should be resolved in order to analyze their effect on the structure most easily.

If the centers of curvature for all points on a curve are plotted, a new curve will be generated called the *evolute*, which is useful in visualizing the curvature of the curve. In engineering analysis the curvature of a deflection curve is the link by which deflection and bending moment (and therefore shear and loading) can be related.

From the evolute the original curve can be generated as indicated in Fig. 2.

Lengths of curves are given where convenient expressions exist. For practical drafting room use the length can be found most quickly by measuring along the curve with a strip of paper. By ticking off points as this is done the work can be done accurately and can be checked. For other purposes, such as determining lengths of cables for cutting, the exact formulas must be used, with allowance for stretch due to loading and temperature.

The *moment of inertia* of a curve

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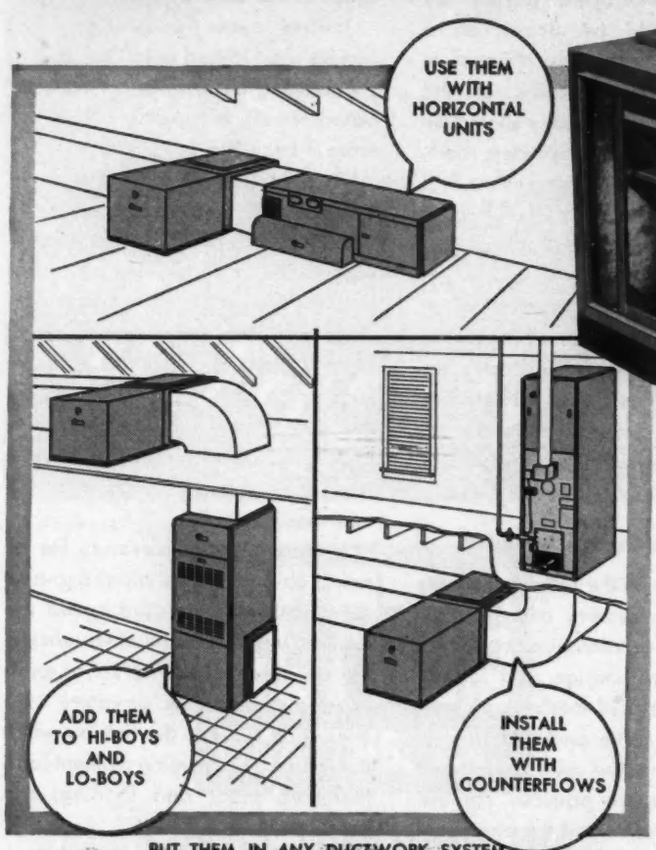

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USEFUL CURVES AND CURVED SURFACES — 2

By Seymour Howard

Assistant Professor Pratt Institute, Architect associated with Huson Jackson and Harold Edelman

can be useful for long thin barrel shell structures in which the cross section of the shell (basically only a curved line) corresponds to the cross section of a beam.

The *areas* under certain curves and their centroids or centers of gravity are given and can be used for calculating the cubages and surfaces of parts of a building. They may also be useful in calculation of deflection (the moment-area method).

Conic Sections

Curves formed by the intersection of a plane with a right circular cone are all of the class called *conic sections*.. The relationship between the plane, the cone and the conic section can be seen by the construction in Fig. 1.

A right circular cone is shown with vertex at V, cut by the plane of a conic. The plane is tangent at F to a sphere which lies wholly inside of the cone and which is tangent to the cone along a circle (like a latitude circle on the earth). The center of this tangent circle is at M; the center of the sphere is at C. The centerline of the cone lies on the line VNMC, in which N is the intersection of the centerline or axis of the conic section with the centerline of the cone.

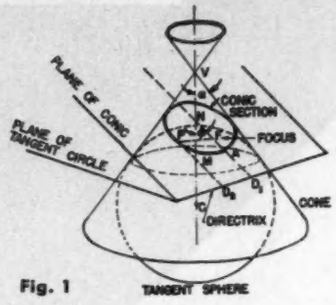


Fig. 1

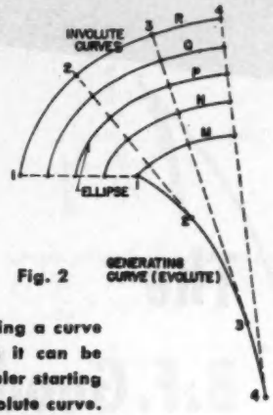


Fig. 2

Right: The use of an evolute curve in generating a curve such as an ellipse, and curves parallel to it can be visualized by imagining a flexible, elastic ruler starting at point 1 on curve R and lying along the evolute curve. As it springs away from the evolute, its straight portion would be 2-2, 3-3, 4-4, etc. In this sketch only curve P is a true ellipse, other curves are parallel
Left: Basic relationships of a conic section

In all conic sections (ellipse, parabola, hyperbola) the focus is the point of tangency between the plane of the conic with the tangent sphere; and the directrix is the line of intersection of the plane of the conic with the plane of the tangent circle.

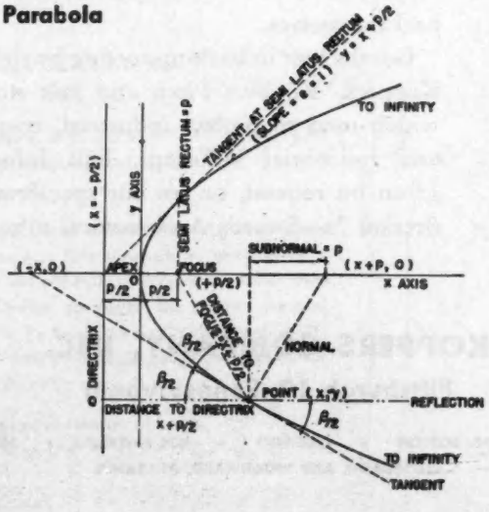
If α is the angle which the axis of the cone makes with the side of the cone and ϕ is the angle which the plane of the conic makes with the axis of the cone.

$$\frac{PF}{PD_2} = \frac{\cos \phi}{\cos \alpha}.$$

This is called the eccentricity of the conic.

Note that the same shape of curve can be generated on cones of different slope (α) by varying the angle of the plane of the conic (ϕ). For the same shape of curve only $\frac{\cos \phi}{\cos \alpha}$ must have the same value.

Parabola

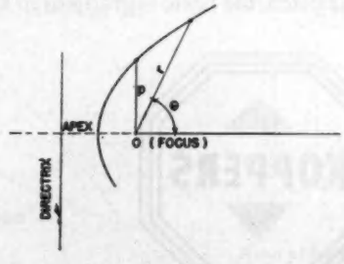


Definition:

$$\frac{\text{Distance from any point to focus}}{\text{Distance from point to directrix}} = \frac{PF}{PQ} = 1 = \text{eccentricity (e)}$$

Equation (standard form): $y^2 = 2px$

Note from characteristics of tangent, that a line from the focus (a ray of light, for example) to any point on the parabola will be reflected parallel to the axis of the parabola



Equation (polar form, pole at focus): $r = \frac{p}{1 - \cos \phi}$

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Roofer: Owen Roofing Company.

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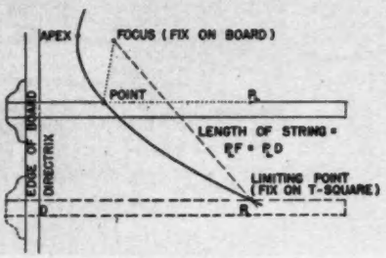
USEFUL CURVES AND CURVED SURFACES — 3

By Seymour Howard

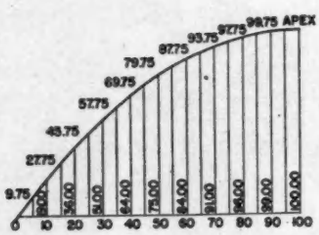
Assistant Professor Pratt Institute, Architect associated with Huson Jackson and Harold Edelman

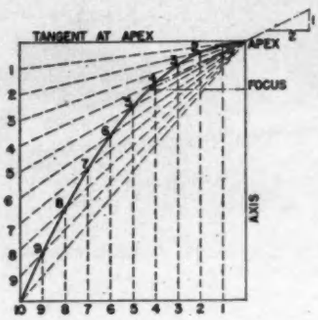
METHODS OF DRAWING A PARABOLA



Above: attach a string (length equal to distance from limiting point on parabola to the focus) to the edge of the T-square and to the focus; hold string taut against T-square with a pencil and slide T-square.

Below: the parabola also can be constructed by knowing the heights of ordinates expressed as a ratio of the apex height (in this sketch 100.0). All parabolas have the same shape, differing only in scale





To draw a parabola knowing apex, axis and one point: divide distance from point to axis in any number of equal parts; divide distance from point to the tangent through the apex into the same number of parts; draw lines parallel to the axis through points in the first line; draw lines from points in second line to apex; intersections of corresponding lines are points on the curve. To find focus, draw line through apex with slope = 1/2; from intersection with parabola drop perpendicular to axis

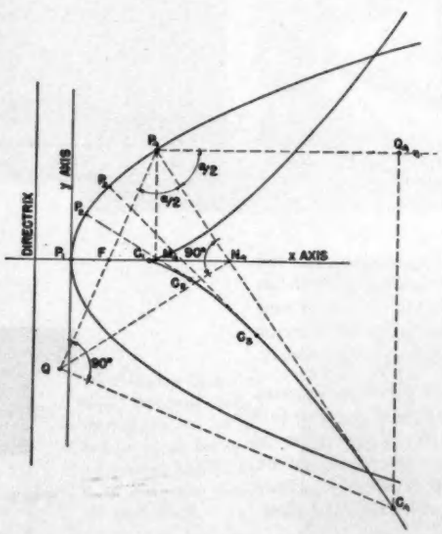
CENTERS OF CURVATURE

Radius of curvature: $R = \dfrac{(p + 2x)^{3/2}}{\sqrt{p}}$

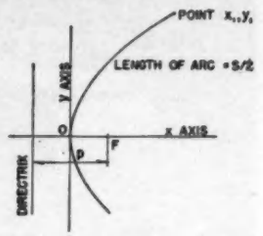
Equation of evolute: $y^2 = \dfrac{8}{27p}(x - p)^3$ **(curve of centers of curvature)**

To find center of curvature C_4 for a point P_4, draw a line through P_4 parallel to x axis; set off $P_4Q_4 = 2P_4F$ and draw perpendicular through Q_4; draw normal P_4N_4 to P_4 by setting of subnormal $M_4N_4 = p$, and extend to meet perpendicular from Q_4 at C_4

Radius of curvature at apex, $P_1C_1 = p$; ($P_1F = p/2 = FC_1$)

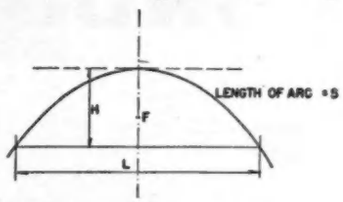


LENGTHS OF ARCS



Length of arc from origin to point x_1, y_1

$$\frac{S}{2} = \frac{y_1}{2p}\sqrt{y_1^2 + p^2} + \frac{P}{2}\log_e\left[\frac{y_1 + \sqrt{y_1^2 + p^2}}{2}\right]$$



Length of parabola

Let $\dfrac{H}{L} = n$

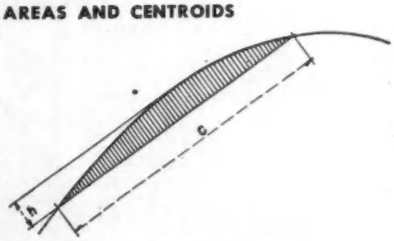
Exact formula:

$$S = 2L\left\{\sqrt{n^2 + \frac{1}{16}} + \frac{1}{16n}\left[\log_e\left(n + \sqrt{n^2 + \frac{1}{16}}\right) + \log_e 4\right]\right\}$$

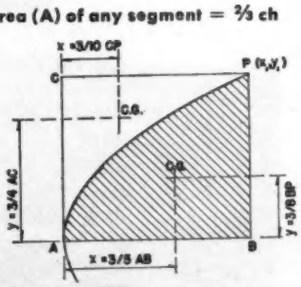
Approximate formula:

$S = L\left(1 + \dfrac{8}{3}n^2\right)$, **sufficiently accurate for construction purposes up to** $n = 1/8$

AREAS AND CENTROIDS

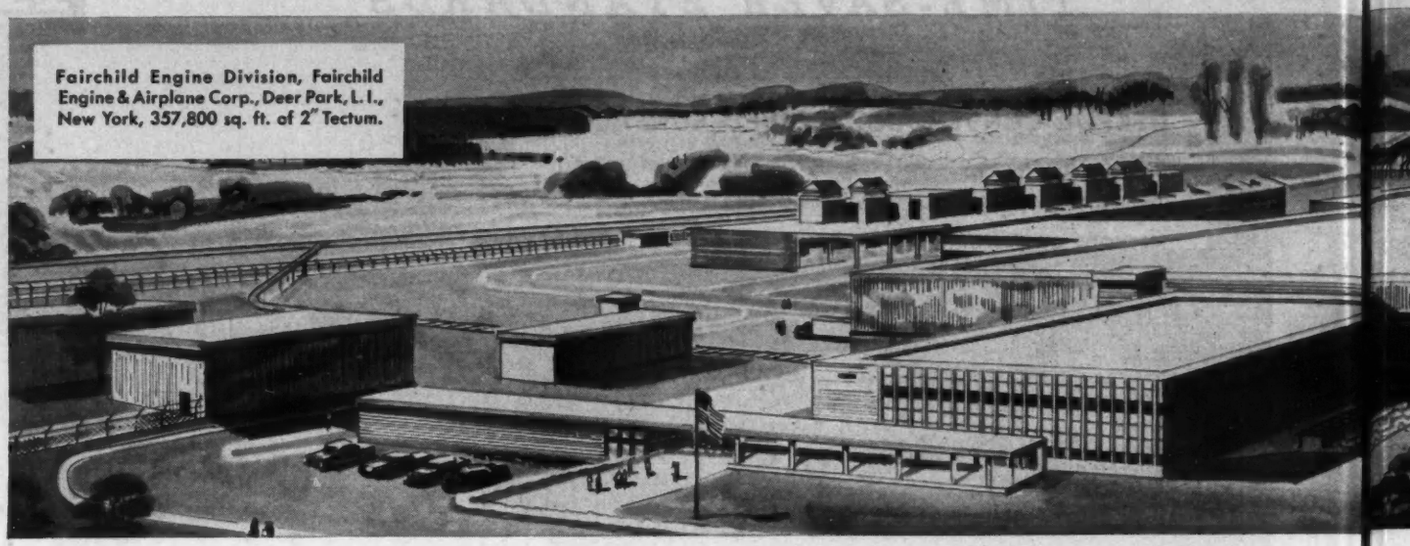


Area (A) of any segment = ⅔ ch



Area of half segment (APB) = 2/3 AB × BP

Area of spandrel (ACP) = 1/3 AC × CP



Fairchild Engine Division, Fairchild Engine & Airplane Corp., Deer Park, L. I., New York, 357,800 sq. ft. of 2" Tectum.

INDUSTRY EXPANDS WITH

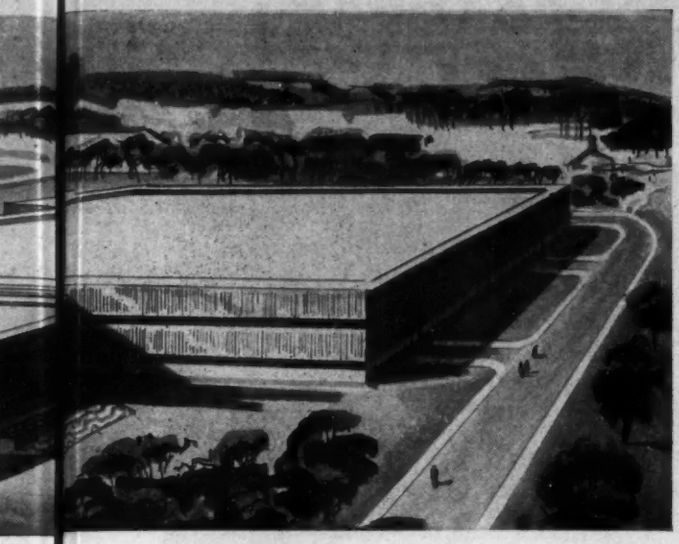
solves many problems in

(above) Tectum wall insulation erected with any of several fastening methods conceals girts. Available in 2" x 30" and up to 120" long. Interior and exterior walls can be erected simultaneously.

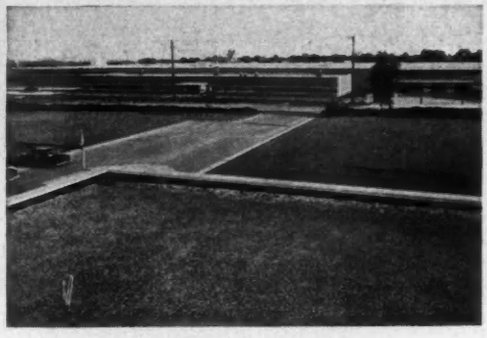
(right) Tongued and grooved Tectum deck with factory applied roofing felt can be quickly laid on any type of framing. Built-up roofing may be applied immediately. Available in four thicknesses and eleven standard sizes.

Tectum®

THE NIN[illegible] BUILDING MATERIAL



The Wesleyan University Press Inc., Columbus, Ohio, 125,883 sq. ft. of 2" Tectum plank for roof deck.



Simmons Mfg. Co., Columbus, Ohio, 222,243 sq. ft. of 2" Tectum plank and 16,302 sq. ft. of 3" Tectum plank for roof deck.

TECTUM...

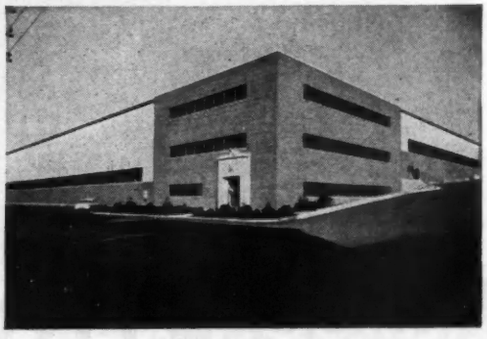
Austin-designed plants

The Austin Company, pace-setters in design and construction of industrial plants used nearly 1 million sq. ft. of Tectum for roof decks and wall insulation in these six buildings.

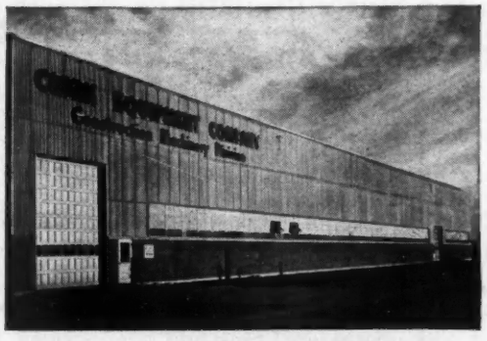
Why? Because Tectum provides a combination of properties in a single material which raise quality, comfort and convenience while keeping costs low.

Noncombustible Tectum has insulating and acoustical treatments built right in. Its textured surface adds a decorative note to building interiors which may be painted time and time again without decreasing acoustical efficiency. Lightweight and ease of handling speed erection.

Find out how this versatile product may be used in your next building. Mail the coupon below today for application details, or call your Tectum distributor.



Parish Pressed Steel Division of Dana Corporation, Reading, Pa., 19,244 sq. ft. of 2" Tectum plank for wall insulation.



Clark Equipment Company, Construction Machinery Division, Benton Harbor, Mich., 45,630 sq. ft. of 2" Tectum plank for wall insulation.

TECTUM DIVISION
105 South Sixth Street, Newark, Ohio

Please send Technical Data

☐ I am interested in roof decks
☐ I am interested in wall insulation

Name _____ *Title* _____

Address _____

City _____ *Zone* ____ *State* _____

Worthington Corporation, Decatur, Ala., 49,632 sq. ft. of 2" Tectum plank for wall insulation. 13,955 sq. ft. of 3" Tectum plank for roof deck.

THEY LOOK ALIKE...

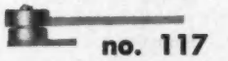
One door is hung on a RIXSON offset style closer—
the other is hung on a RIXSON offset style pivot set

RIXSON PIVOT SETS

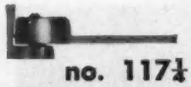
match the pivotal hanging style and general appearance of doors hung on RIXSON concealed floor closers. Provide a trim, secure hanging for doors not requiring a closer.

Pivot sets are furnished complete with matching top pivot.

4 *offset hung types for doors of varying sizes and styles*

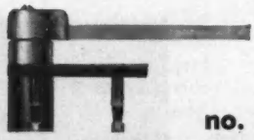


no. 117
Fastened to floor. Offset type for light interior doors.



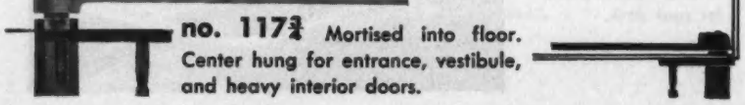
no. 117¼
Fastened to jamb. Offset type for light interior doors.

no. 117½
Mortised into floor. Offset type for entrance, vestibule, and heavy interior doors.



no. L117
Mortised into floor. Offset type for extra heavy or lead-lined doors.

center hung type...



no. 117¾ Mortised into floor. Center hung for entrance, vestibule, and heavy interior doors.

write for complete details and templates

THE OSCAR C. RIXSON CO.
9100 w. belmont ave. • franklin park, ill.

LUSTRACRYSTAL is the Economical Glass
for Large Openings

The Children's Orthopedic Hospital, Seattle, Wash.
Architects—Carelton-Young-Richardson-Detlee
Contractor—Howard S. Wright
Glazier—Bradford Glass

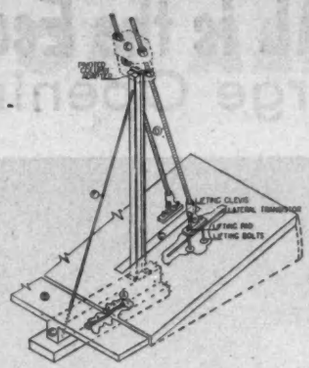
Many architects are turning to LUSTRACRYSTAL for glazing large openings because it is economical, yet completely satisfactory for these purposes. LUSTRACRYSTAL is made in thicknesses up to 5/16". The Children's Orthopedic Hospital is completely glazed with LUSTRACRYSTAL. Here the architects were able to make lavish use of glass yet keep their costs down.

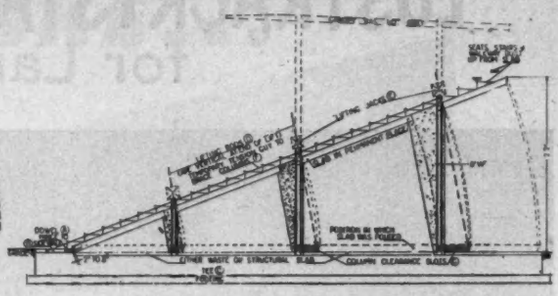
LUSTRACRYSTAL is the product of a patented vertical drawn process, many features of which were developed by AMERICAN Window Glass Company for its own use. Careful testing plus accurate inspection assures you whiter, flatter, clearer glass—LUSTRACRYSTAL.

The next time you have a glass problem —specify LUSTRACRYSTAL and save.

AMERICAN
WINDOW *Glass* COMPANY
Specialists in the manufacture of flat glass since 1899.
9 West Park Way • Pittsburgh, Pa.

(Continued from page 205)





LIFT-SLAB GRANDSTAND IS TILTED INTO POSITION

A lift-slab grandstand was poured in place and "tilted" into position by means of lifting jacks for the Portage la Prairie in Manitoba, Canada.

A dowel hinge, as shown in the drawings, was inserted as a structural anchor and pivot point along the front edge of the slab, thus eliminating all sidewise forces of a free-hanging slab during the tilting process. The actual operation involved the following steps:

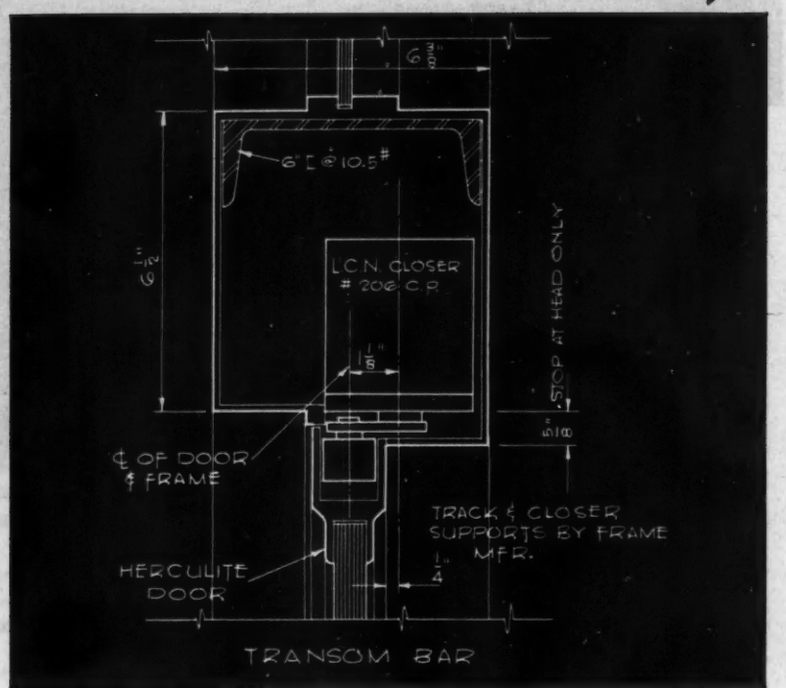
Conventional steel columns were fastened, as shown, with base plates and anchor bolts to tee footings which were poured in trenches. Then a structural ground slab was poured. The sidewalk (B) running along the front of the grandstand provided anchor for temporary column guying braces (F) and also for embedded dowel rods (A) which formed the hinge for the slab. Then the 10-in. structural slab of the grandstand was poured, leaving slots of appropriate length (G) to allow for proper column clearance and for attachment of lifting bolts.

A canopy, as shown with dashed lines on the drawing, was to have been poured on top of the tilt slab and raised into position slightly tilted, but it was eliminated from the program. The lifting pads were bolted to the slab at such a position that the lifting rods became vertical when the slab was in final position. A 2-in. bar on the column heads allowed the jacks to pivot during the lifting. The temporary guying braces tied to the sidewalk kept the columns from moving backward with each lift.

The grandstand itself was supported by eleven rows of three columns. The lift was accomplished in three sections: one nine-column lift and two twelve-column lifts. The jacks were controlled by the counters restricting each lift stroke to safe slab deflection limits. Conventional concrete columns were poured around the steel columns used during the lift in order to fill the large column clearance slots (G). The jacks were left in place until the high early strength concrete was strong enough to bear the slab, and then the holes were troweled over.

Frank R. Lount & Son were architects of the grandstand. Cowin & Co., Ltd., were the engineers.

(Continued on page 226)



CONSTRUCTION DETAILS

for LCN Overhead Concealed Door Closer Shown on Opposite Page

The LCN Series 200 Closer's Main Points:

1. Efficient, full rack-and-pinion, two-speed control of the door
2. Mechanism entirely concealed; arm disappears into door stop on closing
3. Hydraulic back-check prevents door's being thrown open violently to damage walls, furniture, door, hinges, etc.
4. Hold-open (optional) set at any one of following points: 85°, 90°, 100° or 110°
5. Easy to regulate without removing any part
6. Used with either wood or metal doors and frames.

Complete Catalog on Request—No Obligation or See Sweet's 1955, Sec. 17e/L

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Earle L. Sheppard, F.R.A.I.C., *Architect*

MODERN DOOR CONTROL BY *LCN* · CLOSERS CONCEALED IN HEAD FRAME

25 ADELAIDE WEST, TORONTO, ONTARIO

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Construction Details on Opposite Page

Macomber Did Something About The *Time and Cost* of Erecting Steel Buildings

With V-LOK Steel Framing, an industrial building like this is a real source of pride to the owner, the structural engineer who designed it and the contractor who watched it go together faster than any job he ever erected.

All of these things are fine but COST and EARLIER OCCUPANCY sell V-LOK to School Boards, Shopping Center Owners, Medical and Insurance Building Owners, Parking Facility Owners, etc.

Before you design or build anything—see what V-LOK will do for you and the owner.

Write for Architects' and Engineers' Design Manual

STANDARDIZED STEEL BUILDING PRODUCTS

MACOMBER INCORPORATED

CANTON 1, OHIO

• ENGINEERING • FABRICATING AND ERECTING •

NAILABLE STEEL JOISTS • LONGSPANS • BOWSTRING ROOF TRUSSES • METAL DECK • V-LOK STEEL FRAMING • STRUCTURALS

never before

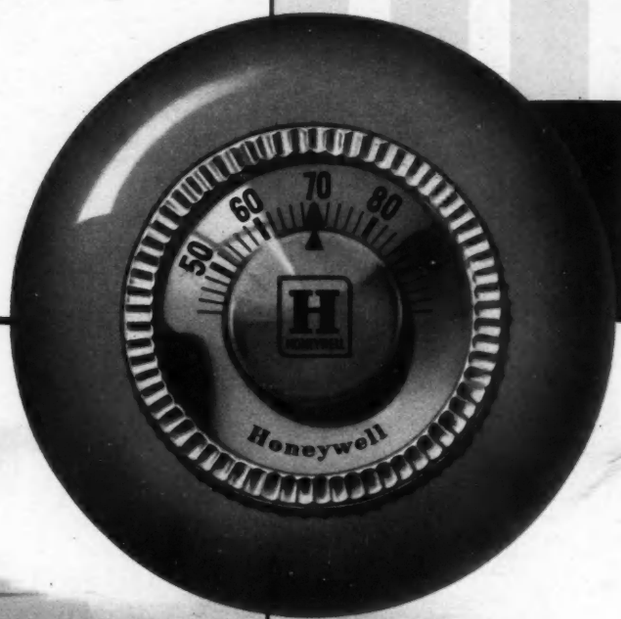
a pneumatic thermostat like this!

The Honeywell Pneumatic Round

so technically advanced in every way that it outmodes all others!

The first completely new pneumatic thermostat since the trend to contemporary design in modern architecture!

New force-balance principle, new low-mass sensing element, new design make it the fastest responding, most accurate, best looking pneumatic thermostat on the market!

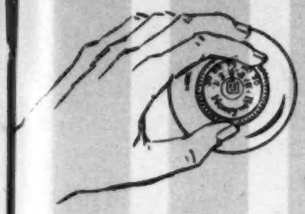


ACTUAL SIZE

so beautiful!

Modern Round Styling Complements Contemporary Interiors

A refreshing departure from previous pneumatic thermostat design gives the Pneumatic Round pleasing style features to enhance the simplicity of the modern commercial building. Designed in the studios of Henry Dreyfuss, world-famous industrial designer, this graceful thermostat was made for today's functional interior. And its bronze-colored metal cover may be lifted off and painted to blend in with the color of the walls or furnishings.



so easy to use!

Direct-action Dial Simplifies Operation

Setting, reading and checking of performance are simplified by one easy-to-read scale that serves both the thermometer and the thermostat setting indicators.

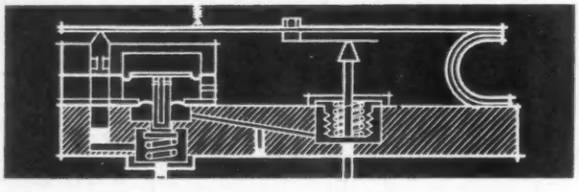
Adjustable stops inside the thermostat let your client limit the temperature range. Or, he can lock the desired temperature setting in place. This feature is most attractive to hospitals and schools where limited authority in dictating temperature conditions may be advantageous.

so very practical in design!

Rugged Construction Assures More-Than-Adequate Protection

A durable metal cover locks to the Pneumatic Round to guard it against shock or tampering. Other working parts are protected in the base. A grille, completely encircling the thermostat, protects inner parts yet allows free flow of air so that room temperature is accurately measured.

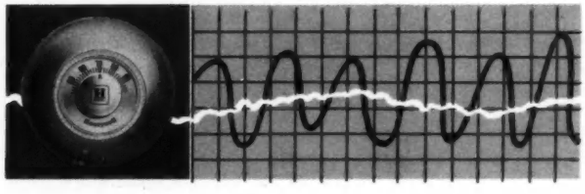
THE HONEYWELL Pneumatic Round



so ingenious in concept!

Force-balance Principle Gives Precise Modulation

By making new use of the force-balance principle—used in the finest, most accurate industrial instruments—the Pneumatic Round provides an automatic self-check on each change in control signal. Through a special signal feedback arrangement, it creates a snubber action which stabilizes the operation of the valves and dampers and makes possible the use of a low-mass, fast-acting sensing element. This results in smooth, accurate system response.



so marvelously sensitive!

Low-mass Sensing Element Makes for Fastest Response

The Honeywell Pneumatic Round is the fastest responding pneumatic thermostat on the market. The unique force-balance principle allows the use of a low-mass bimetal element. This makes the Round so sensitive that it responds almost instantly to changes in room temperature. This sharply reduces the lag in the air conditioning system response by providing for more exact modulation of the system as changes in demand occur.

so mechanically superior in every detail!

Numerous Engineering Improvements Facilitate Easy Installation and Maintenance

1 Two new flexible plastic tubes plug into main and branch air lines for simple connection. Internal springs prevent them from crimping or collapsing.

2 Calibration is accomplished quickly by turning a screw with an ordinary screwdriver.

3 A readily accessible throttling nut aids adjustment of the throttling range.

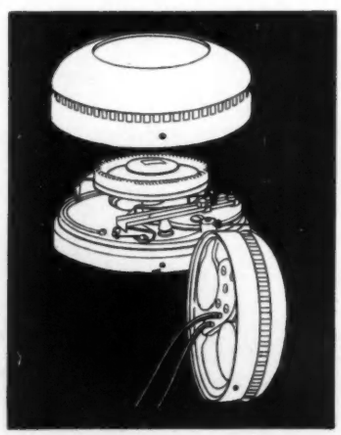
4 Branch line air pressure is easily tested by inserting a plug-in type air gauge directly into the gauge adapter.

5 Loosening two screws instantly permits removal of the cover.

6 Tight filter keeps air clean—is easily replaced if necessary.

7 Thermostat is simply constructed with fewer number of parts.

8 Fittings for either flush or surface mounting are provided with each thermostat. For modernization work a special adapter plate neatly covers hole left in wall by old thermostat.



in every room . . . in every type of commercial building . . .
wherever your plans call for the latest and
finest in temperature control equipment . . .

THE HONEYWELL

Pneumatic Round

has application features that surpass
all previous pneumatic thermostats!

IN HOSPITALS . . .

nurses need not use room lighting or flashlights to check temperature settings — Luminous "Nite-Glowing" Dials are clearly visible in total darkness. Cover available in satin chrome finish if desired.

IN SCHOOLS . . .

the simple dial setting and easy reading of the Pneumatic Round aid teachers in matching classroom temperatures with student activity. This makes for more take-home learning.

IN APARTMENTS . . .

painted to harmonize with the decor of the room, the Pneumatic Round brings residential luxury to every tenant. Easy adjustment and accurate performance provide healthful, comfortable temperatures.

IN INDUSTRIES . . .

the outstanding performance of the Pneumatic Round assures constant temperatures throughout the plant. And people working in the proper temperature can't help but produce more efficiently.

IN OFFICES . . .

the precise temperatures maintained by the Pneumatic Round promote increased office efficiency. With comfortable offices in the morning and an automatically controlled climate all day long, occupants think and work most productively.

IN HOTELS AND MOTELS

guests are sure to enjoy their stay because a thermostat controls the temperature in every room. Yet, there'll be no danger of tampering because the cover locks on. And adjustable setting screws allow your client to limit the temperature range.

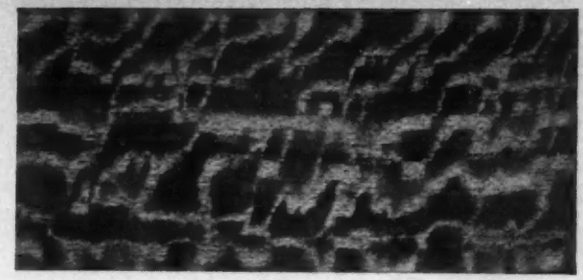
AND THERE'S NO INCREASE IN PRICE FROM ORDINARY PNEUMATIC THERMOSTATS!

For further information,
call your local Honeywell office.
Or write to Minneapolis-
Honeywell Regulator Company,
Minneapolis 8, Minnesota

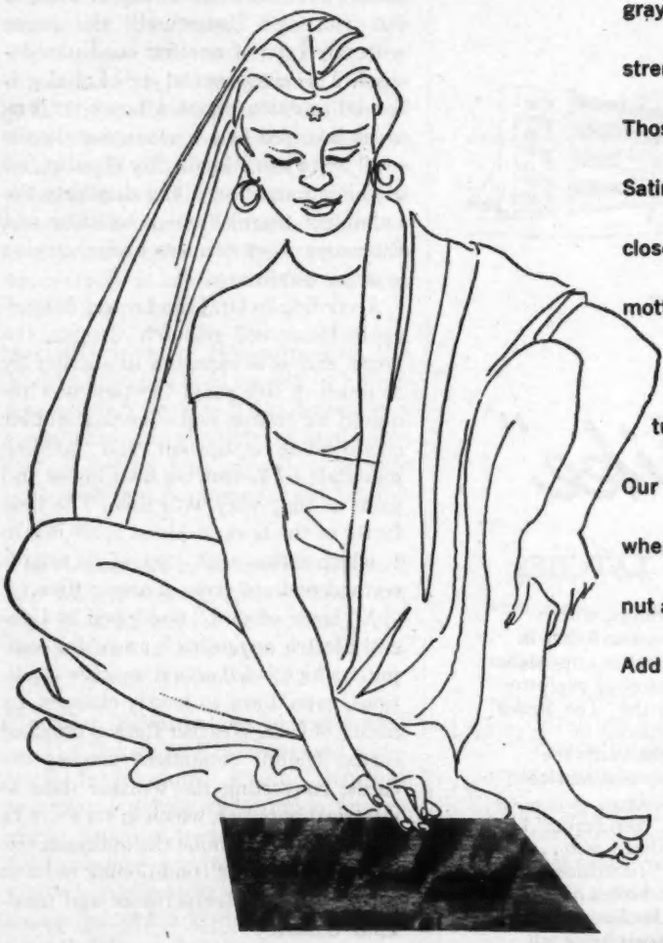
MINNEAPOLIS **Honeywell** HONEYWELL

First in Controls

MINNEAPOLIS 8, MINNESOTA • TORONTO 17, ONTARIO
112 offices across the nation



SATINWOOD / *masterpiece of nature...*



The Queen of Woods. Smooth and lustrous as the fine satin of a Cingalese gown . . . in lambent gold—or restful grays and tans. Here is soft beauty, but also hardness, strength and great durability.

Those who specify . . . those who live with luxurious Satinwood—do so with a touch of love and pride. Its close, even texture, distinguishing ripple mark and fine mottle, make it unusually decorative. Wherever used, it carries its justification into every line of architectural design.

Our portfolio of rare woods is the most complete anywhere. Rosewood, Harewood, English Brown Oak, Butternut and Teak are in the collection of 325 grain patterns.

Add our brochure to your library . . . see below

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STEM Inc.
785 Grant Line Road, New Albany, Indiana

47 (43)

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☐ Send representative immediately ☐ Send brochure on Satinwood

Name_____

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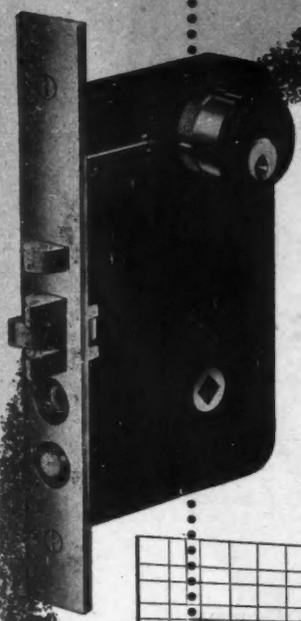
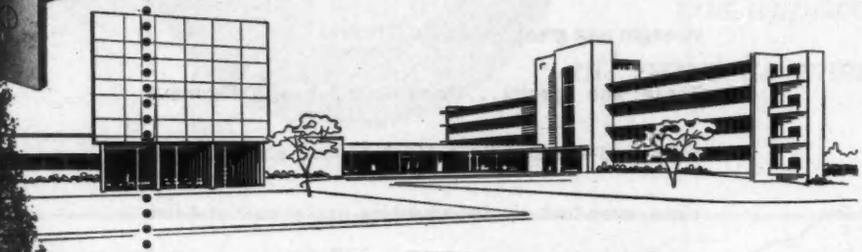
City and Zone_____ State_____

The right type lock line for every type of service



Specified*

for the
Bristol Memorial Hospital
Bristol, Tenn.



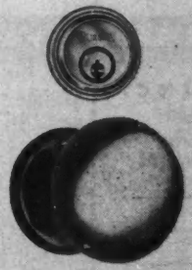
RUSSWIN®

"Ten Strike"

MORTISE LOCKS AND LATCHES

In fine public buildings, where traffic is heavy, no other Russwin line of locks and latches approaches the outstanding record of performance established by the "Ten Strike" Mortise Line. Thousands of installations over the years are proving the security and service advantages of its design. Advantages of the "Ten Strike" Line include: a standardized case . . . one size for over 25 functions; a smooth case . . . no bosses or projections; hubs, latches and dead bolts are forged or cast brass; all interior working parts are extruded of wrought metal; reversible anti-fiction latch bolts.
For complete details write, Russell & Erwin Division, The American Hardware Corporation, New Britain, Connecticut.

Architects:
A. L. Aydelott and Associates, Memphis, Tenn.



*Sectional Trim, Bristol Design, used with "Ten Strike" Installation . . . also "400" Closers, Exit Bolts, Door Holders and Ball Bearing Butts.

AE ROUNDUP

(Continued from page 218)

ELECTRONIC SYSTEMS TEST HEATING AND COOLING LOADS

Two different electronic systems have been devised in widely separated research laboratories to duplicate both physical and climatic conditions which affect residential heating and cooling and so to facilitate analyses of heating and cooling equipment and house building materials.

An electronic brain developed by research scientists at the Minneapolis-Honeywell Regulator Co. not only can duplicate the thermal characteristics of a house, complete to the effects of such factors as storm windows and insulation, but can also "surround" the house with any type of weather condition desired. This component type of analog is fed information about a house such as areas involved and construction details —all by twisting knobs. By digesting all of this information it can duplicate the building's thermal characteristics and determine what happens under varying weather conditions.

According to Dr. Finn Larsen, Minneapolis-Honeywell research director, the house analog is expected to shorten by as much as five years the time now required for testing home heating and air conditioning equipment and building materials by measuring heat losses and gains as they vary with time. The time factor of the brain is about 5,000,000 to 1, which means that 1 sec of its time is equivalent to 60 days of actual time.

A "house of wire," developed by General Electric engineers, is an analog computer which is fed actual weather conditions, even down to hourly changes, by means of U. S. Weather Bureau punched cards. Digital computers process the cards, converting the weather data to electrical impulses, which in turn can be analyzed to determine the optimum size of heating and air conditioning units to assure constant temperature and maximum economy.

So far, say G.E. engineers, the computer has shown that the architectural factors that most vitally affect home heating are placement and size of windows, placement of doors, the angle and extent of roof overhang and such landscaping considerations as the locations of trees and shrubs that can act as windbreaks. It has shown also that architectural design can be used to take

maximum advantage of heat storage in materials.

Solar Energy Research is a book which presents the status of the utilization of solar energy as of 1954. It springs loosely from a comprehensive symposium on the subject which was organized in 1953 by the University of Wisconsin and sponsored by the U. S. National Science Foundation. Contributions on the subjects of their particular interest are included from many of the most active scientists in this field. Copies of the book may be ordered from The University of Wisconsin Press, 811 State St., Madison, Wis. ($4.00. Edited by Farrington Daniels and John A. Duffe.)

Paints applied to wood are being studied by the National Paint, Varnish and Lacquer Association and the National Lumber Manufacturers Association. The combined technical facilities of both organizations are being utilized to study such subjects as moisture condensation, including the extent of vapor transmission through interior and exterior paints, and how this vapor transmission affects adhesion of the paints to lumber and other materials.

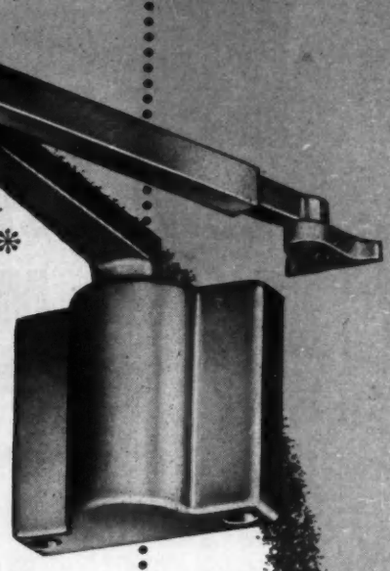
An all-electric community, the world's first, has been opened in Fullerton, Calif. A project of 431 houses, the community uses all electrical appliances and all-electric heat pumps to provide air conditioning in summer and heating in winter.

The National Warm Air Heating and Air Conditioning Association will hold its 42nd annual convention at the Hotel Statler in New York City on November 30 and December 1, 1955.

Modular Measure has been endorsed by The Bricklayers, Masons and Plasterers International Union, the first American building trades union to give official sanction to the system. At its 22nd biennial convention, the union adopted unanimously a resolution recognizing the practical and cost-reducing potentialities of the system.

Longer life for rubber and rubber products may be possible with new materials called "anti-rads." These materials, when added to rubber stocks in process before vulcanization and exposed to atomic radiation may extend the service life of rubber at least 10 times, according to engineers of the B. F. Goodrich Research Center.

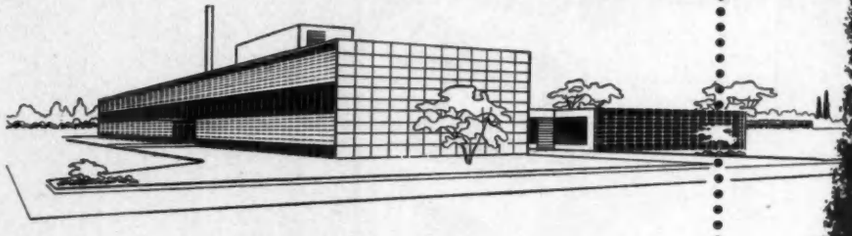
Finishing Hardware for every building need



Specified*

for

Kittitas County Court House
Ellensburg, Washington



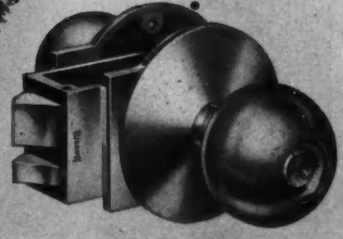
RUSSWIN®

"400"

DOOR CLOSERS

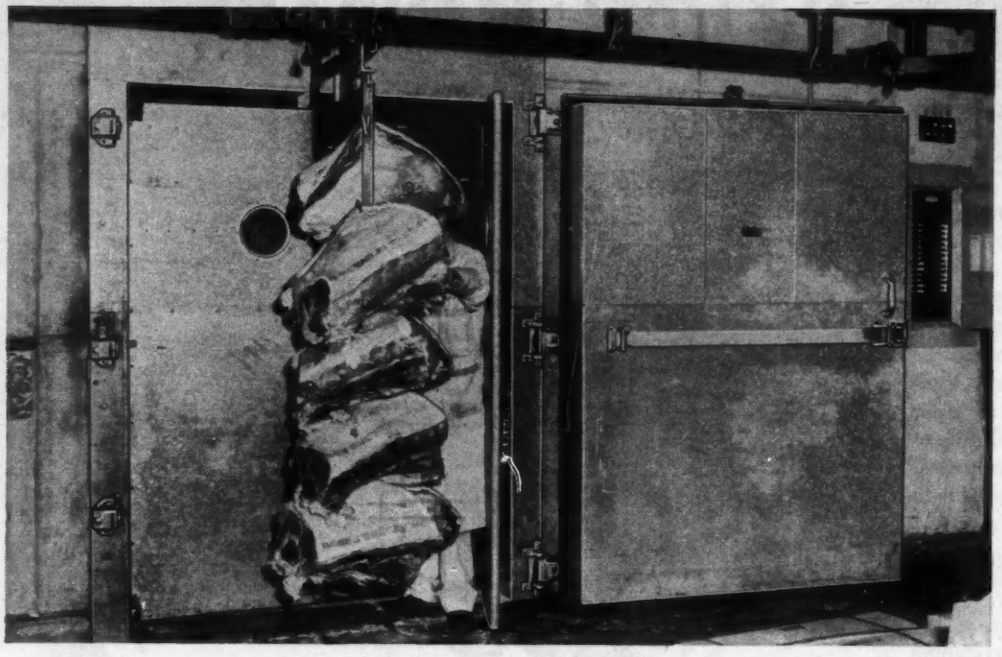
An "open and shut" case favoring Russwin "400" closers usually results when the ultimate in closer performance is demanded. Here's why. The "400" closer combines *both* effective power and modern design. It has no equal structurally for strength, yet it's so compactly designed that, as a semi-concealed closer, it projects only 1¾" from door face. Only "400" closers have *four* combinations of closing speeds plus silence adjustment. A choice of five spring sizes is offered for its one size housing. Check all advantages. Write Russell & Erwin Division, The American Hardware Corporation, New Britain, Connecticut.

Architects:
John W. Maloney A.I.A.,
John H. Whitney A.I.A.
Yakima, Washington



*also RUSSWIN "UNILOCK" Mono Design

New Boston Wholesale Food Terminal Speeds Meat Handling with Jamison Doors



Installation at Gertman Packing Co.
Architect: Thomas Worcester, Inc.
Insulation Contractor: United Cork Co.

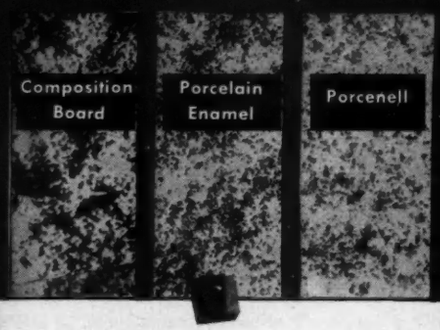
Vestibule Track Door—*permits rapid in and out movement with minimum refrigeration loss while door stands open. Metal clad for sanitation, steel kickplate for extra protection. Upper view: Inside. Between 50° shipping room and 34° holding room. Lower view: The loading dock.*

At the new Massachusetts Wholesale Food Terminal on Newmarket Square, Boston, Jamison doors work for the many separate meat handling firms housed in these buildings. Within the plant, a super freezer door protects a below zero freezing compartment and vestibule track doors permit rapid handling between the beef holding room, the shipping room and the loading dock. For help with your cold storage door problems, consult your architect or write direct to JAMISON COLD STORAGE DOOR COMPANY, HAGERSTOWN, MD., U.S.A.

JAMISON
HAGERSTOWN, MARYLAND, U. S. A.
More JAMISON Doors are used by more people than any other Cold Storage Door in the world.

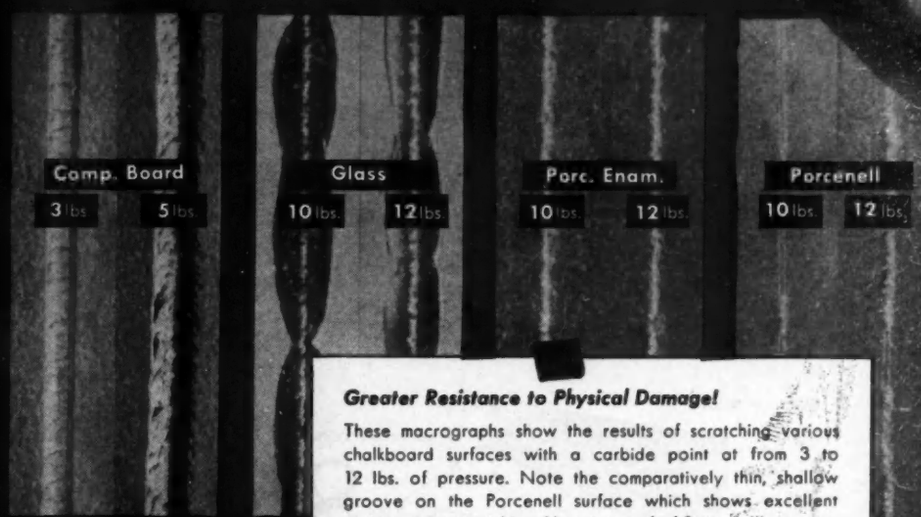
The macrographs shown below are the results of tests made at an independent laboratory. They are reproduced here as evidence of the superiority of Porcenell . . . the entirely new and different Chalkboard. Benjamin Electric Mfg. Co., for many years a leader in Better School Lighting, now brings you this further advancement in chalkboards for better seeing and improved instruction.

Lab Tests Prove Superiority of NEW CHALKBOARD!



A New High in Visibility!

Macrographs of chalkmarks on three chalkboard surfaces show dark areas as "valleys" and lighter spots as "peaks." Note that Porcenell has no extreme high or low spots, clearly pointing out the greater evenness of this surface. That means chalk "flows on" more evenly without effort, resulting in a clearer, easier-to-see image. It also means erasing without pressure, because there are no chalk traps to leave "ghosts."



Greater Resistance to Physical Damage!

These macrographs show the results of scratching various chalkboard surfaces with a carbide point at from 3 to 12 lbs. of pressure. Note the comparatively thin, shallow groove on the Porcenell surface which shows excellent resistance to scratching. Here is proof of Porcenell's greater resistance to physical damage, such as vandalism, accidental damage by maintenance people or typical schoolboy mischief.

All the Advantages of Porcelain Enamel Chalkboards . . . *PLUS* lower cost . . . less weight . . . greater chip-resistance!

New materials and new low-temperature manufacturing permit use of lighter-weight steel to lick the cost problem and make possible easier installation. Porcenell never needs replacement due to age . . . green color cannot fade . . . completely resistant to moisture.

For complete details send for **FREE PORCENELL BOOKLET!** Mail coupon to Benjamin Electric Mfg. Co., Dept. **Q-1,** Des Plaines, Ill.

name_____

address_____

city_____ zone_____ state_____

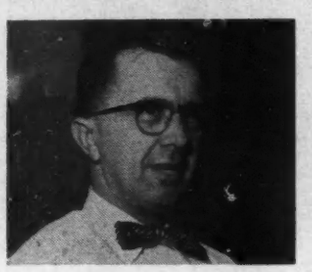
NEW BENJAMIN PORCENELL CHALKBOARD

Porcenell is a patented, vitreous process developed by Vitreco, Inc., a research organization jointly owned by Youngstown Sheet and Tube Co. and Poor and Company. The Porcenell development is the result of over 15 years and three quarters of a million dollars of research. In this product there has been achieved an entirely new, non-warping, lighter weight, finer, vitreous, hard chalkboard surface never before commercially available. Benjamin Porcenell Chalkboards are available through:

Beckley-Cardy Co., 1900 N. Narragansett, Chicago 39, Ill. and Educational Equipment Inc., 2623 Woodhill Road, Cleveland 4, Ohio.

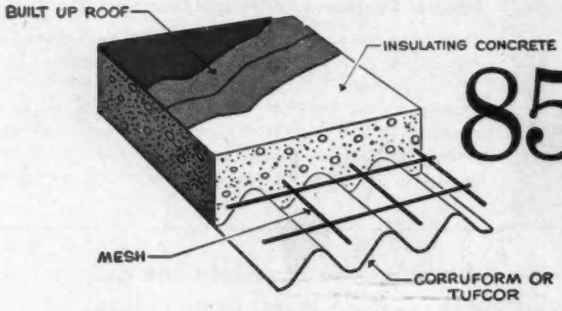
Job Superintendent

W. C. BOWEN says, "Roofing time was really important and Tufcor kept work moving ahead smoothly. Pre-sizing made it easy for two-man crews to place 7 to 8,000 sq. ft. a day, and pouring was fast, too—28,000 sq. ft. in one day. Tufcor gave us a strong roof and a safe working platform."



Contractor's Representative

WARREN O. LAMB says, "Speed and economy are two big advantages of Tufcor. Roofing proceeded on schedule and we saved the cost of shoring, too. That meant savings in time and labor costs."



85,000 sq. ft. fire-blankets

Nashville architects and builders provide fire protection for owners and tenants, thousands of dollars in insurance savings.

An 85,000 sq. ft. roof of Granco Tufcor and Corruform with lightweight insulating concrete greatly increases the fire safety of the new Green Hills Village Center, a two-story multi-shop facility which will serve over 5,000 Tennessee families in the suburban area about 6 miles southwest of Nashville, Tenn.

Because of its fire-resistant qualities, the Tufcor-based roof serves as a positive check against the spread of fire via the roof should it break out in any one of the center's several stores.

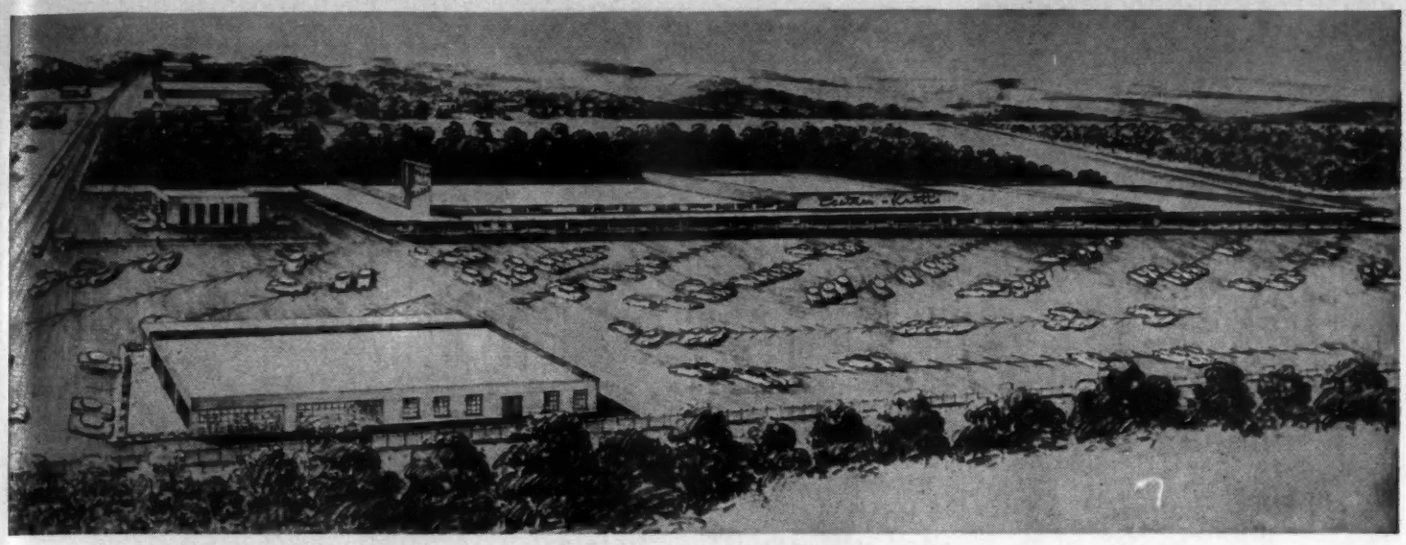
The speedily constructed Tufcor roof follows closely the design of Granco's Tufcor roof which performed so sensationally well in an ASTM E119-50 fire test in 1954. In that 45 minute test, at temperatures up to 1720° (F.), the Tufcor roof didn't burn, didn't feed the flames, and didn't fall. After the test, the roof was still able to carry the full design live load.

Warren O. Lamb, Vice President of W. C. Holt and Sons, general contractors on the Green Hills job, says, "Tufcor is a great time and money saving way to build a fire-safe roof. All you do is open a bundle of Tufcor sheets, place and secure them to the steel framework, and immediately trades have a rigid working platform!"

Tough-temper, corrugated steel Tufcor makes fire-safe roof construction simple, fast and economical. For information, estimates or costs on your building plan, contact home or district office, attention Dept. R-4.

Handles Easily, Places Fast. Tufcor arrives pre-cut to building size. Measuring and cutting is eliminated. Two or three men can place up to 10,000 sq. ft. a day.

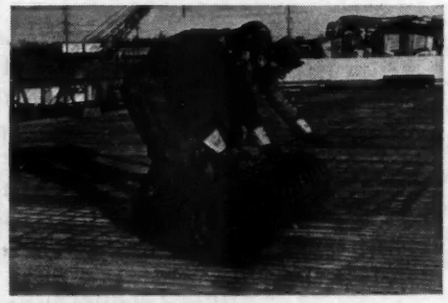
Permanent, Fire-Resistant Roof Deck is formed by cast-in-place slab. A strong bond forms between galvanized steel sheet and lightweight concrete fill giving high-strength rigidity to finished deck.



Green Hills Village Center, *Nashville, Tennessee* • Owners: *William C. Weaver, Jr., & W. H. Criswell*
Architects and Engineers: *Hart, Freeland & Roberts, Nashville, Tennessee* • General Contractor: *W. F. Holt & Sons, Nashville, Tennessee*

safe Tufcor roof new shopping center

Steel Sheets Are Quickly Clipped to the steel framing. Welding is equally fast. Positive attachment of tough-temper sheets adds rigidity to roof framework.



An Immediate Safe Working Deck is obtained as soon as Tufcor is attached. Light mesh is added for shrinkage control of the lightweight insulating concrete.

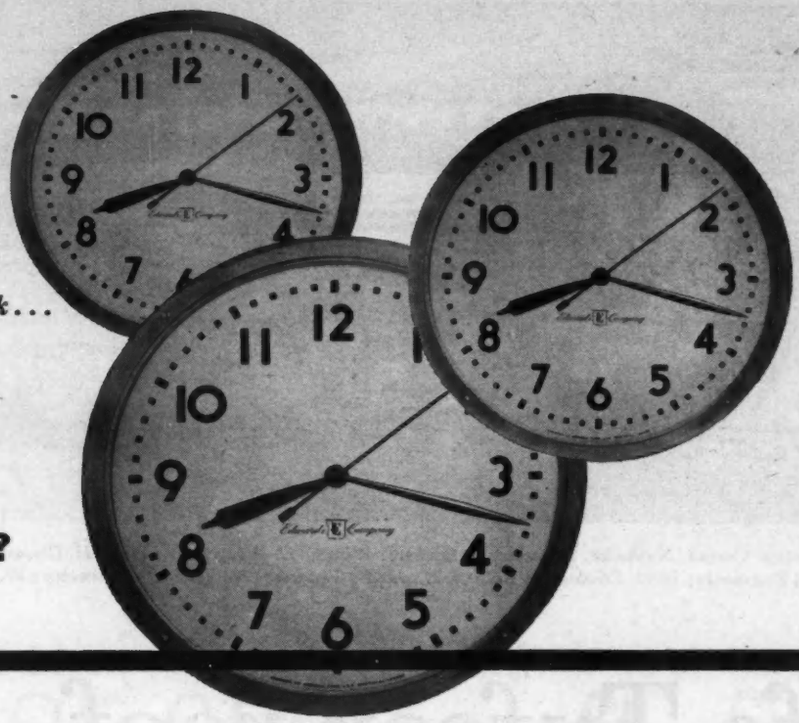
Insulating Concrete Placed on Tufcor is fast operation. On an average roof construction, this material weighs less than 6 pounds per square foot.

Perfect Base for Built-Up Roof. Deck offers two excellent advantages—a good firm base on which to apply the roof and an inorganic, permanent base for long life of the built-up roof.

Neat Plaster Ceiling over Fire-Safe Tufcor. Any normal ceiling treatment is easily applied to Tufcor. Its attractive galvanized surface is sometimes left unfinished when light reflection is wanted.

see our catalog in
S
or write for copy

GRANCO
STEEL PRODUCTS CO.
Also manufacturers of
Cofar, Corruform and Roof Deck
Subsidiary of GRANITE CITY STEEL CO.
Main Office: Granite City, Illinois
District Offices: Dallas • St. Louis • Kansas City
Chicago • Minneapolis • Atlanta
Distributors in 80 principal cities



architects and engineers ask . . .

why doesn't Edwards use hourly correction?

When you go on your summer vacation you want to have your car in top shape . . . you make sure the tires are good, that the car has been properly lubricated. But you don't insist that your service station fill your radiator with anti-freeze . . . you don't need it.

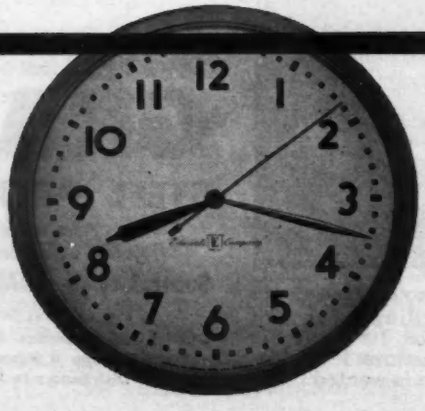
And that is why Edwards doesn't use hourly correction . . . you don't need it.

Edwards has built many thousands of clock systems . . . many of them installed in very famous buildings. Engineers report, from their experience in the field, that these Telechron® motored clocks are the most dependable, most accurate electric clocks commercially available today. Their field work has shown them that without any special electronic controls, without any hourly corrections, Edwards clocks never get out of step with each other.

You see, the rotor, or heart, of the Telechron motor is a very light weight, high speed part. In fact, it weighs only 1/6th of an ounce and turns at 3600 rpm. Now, if the power should fail, these motors all stop immediately due to their light weight, and as a result of the necessary gearing there is no recognizable difference between the hands on each clock. And of course, since they are all running from the ever accurate 60 cycle current supplied from the well regulated central power station there can be no difference between clocks while operating.

There are other advantages to not having hourly correction, that will mean dollars and cents to your clients. Since there is no master clock required, you save expensive maintenance, maintenance which over 10 years often costs more than the clock system. Also, your clocks are accurate all the time, not just during the minutes of correction, as in other types of systems.

If you require an easy to operate, accurate clock system for your next hospital or school, call in your Edwards man . . . or write to Dept. AR-8 for further information.



Synchromatic Clock Systems

EDWARDS *Company, Inc., Norwalk, Conn.*
In Canada, Owen Sound, Ontario

Specify Edwards and Be Sure

America's schools run more smoothly . . . America's school children are better protected thanks to Edwards.

Edwards clock and program systems provide an accurate, simple and flexible means of programming activities of large groups in schools, institutions, offices and industrial plants. A program instrument is used having as many circuits as there are different programs. Standard sizes contain 1, 2, 4, or 6 circuits. Signals may be sounded any minute, 24 hours a day, 7 days a week. With a signal control panel it is possible to change program or signal schedule in any room or location to another program without disturbing the overall program setting or wiring. The Edwards program instrument is powered by the same heavy duty Telechron motored movement used in the clock systems.

TRIM, MODERN, EFFICIENT:

Edwards Fire Alarm Systems are chosen by leading architects to protect America's schools, hospitals and important buildings. Write for Bulletin on Fire Alarm Systems.

EDWARDS
protects . . everywhere!

AE PRODUCTS

(Continued from page 203)

Metal Insulation Joint Sealer. *Melltabs* provide a mechanical vapor seal between the joints of vapor-barrier faced insulation in metal buildings. In this installation they are applied over purlins to which metal roofing has been bolted over Fiberglas-reinforced, aluminum-foil-faced insulation. The metal tabs are of galvanized metal cut to purlin length, 3 to 3¼ in. wide, stamped with a fluted center to fit into the formations of the roof sheet. They overlap the facing on each side of the insulation joint by 1½ in. Manufactured by the Metltab Co. of Buffalo, Metltabs are sold nationally by *Multiglas Products Co., 77 Pierce Ave., Hamburg, N. Y.*

Pressure-sensitive Plastic Tape seals the joints in plywood forms to hold back tons of poured concrete in construction. The waterproof tape, Scotch brand plastic tape No. 471, makes greater re-use of forms possible by preventing moisture from deteriorating the edges of the plywood. The tape is colored yellow to warn workers not to drag heavy objects over the sealed joints. *Minnesota Mining & Mfg. Co., St. Paul 6, Minn.*

Weldwood Contact Cement makes possible a fast way to bond wood, plastic laminates, Fiberglas, aluminum, rubber and other products. It is especially recommended for applying plywood panels to walls. The cement is brushed on furring strips and the backs of the panels to lock the two surfaces together permanently on contact. *U. S. Plywood Corp., 55 West 44th St., New York 36, N. Y.*

(Continued on page 237)

MONEY MAKERS you should ask about!

Richkraft 65
FUNGI RESISTANT
The finest water vapor barrier for under concrete slab or for over crawl space where slab is not poured on the ground. Richkraft 65 is F.H.A. or V.A. accepted in lieu of felt membrane or 55 lb. roll roofing. Clean, fungi resistant, smooth Richkraft 65 with its non-sticky surface cuts labor at least two thirds. It comes in a full range of sizes up to 96 in.

Richkraft
BUILDING PAPERS
Only Richkraft brings you a complete line of building papers which assures the use of the *right* paper for every job. There is *Skuffpruf* Heavy Duty, fully reinforced, plasticized and waterproof: *Medium* reinforced, plain Kraft: *Duplex* 30, a low-cost duplex and last but not least: *Black Sheathing Paper.* With this line you have an answer to every problem.

Richflex
With Richflex you do a 4-way job: *keep winter heat in, summer heat out,* establish a *moisture barrier* and a *cold air barrier.* Richflex turns back more than 75% of the heat rays striking it.

Richbead
Richbead metal corners eliminate banged up corners at doorways, arches, reveals and soffits. It serves in both new and existing homes and it can be had for either interior or outside corners. Richbead can be installed by anyone and makes great savings by eliminating casing and factory corners.

ANOTHER Richkraft PRODUCT

THE RICHKRAFT CO.
510 N. Dearborn Street AR
Chicago 10, Illinois

Gentlemen:
Please send me the full story on the Richkraft Line

NAME_____

ADDRESS_____

TOWN_____ ZONE___ STATE____

Looking Out
through
Parallel-O-Plate
you see every
detail distinctly.

Looking In
through
Parallel-O-Plate
you hardly
know the glass
is there.

Looking At
merchandise
through
Parallel-O-Plate
you see it
as it is.

Lamson's new suburban store, Toledo, Ohio.
Architects: Weinberg and Teare, Cleveland, Ohio.

Shoppers see better through new Parallel-O-Plate glass

You are looking at the most distortion-free plate glass ever made in America—Libbey·Owens·Ford *twin-ground* Parallel-O-Plate Glass!

It makes quite a difference to the shoppers here at Lamson's great new suburban department store in Toledo, because they see things in the windows and display cases more clearly and distinctly than ever before.

It makes quite a difference to the store owners, too, because the perfection of the glass carries out the whole atmosphere of fine merchandise and service.

Parallel-O-Plate makes a difference *wherever* it's used—in homes and fine buildings as well as in stores. Considering all of the things, every day, that you see through glass, freedom from distortion is vitally important.

In most localities, Parallel-O-Plate Glass costs no more than ordinary plate glass! Call your local Libbey·Owens·Ford Distributor or Dealer—he can give you estimates, take care of installation, provide all kinds of service. You'll find his name listed under "Glass" in phone books.

P.S. You can get *mirrors* made of Parallel-O-Plate from your department store.

L·O·F Parallel-O-Plate Glass

finest plate glass made in America...only by

LIBBEY·OWENS·FORD *a Great Name in Glass*

TOLEDO 3, OHIO

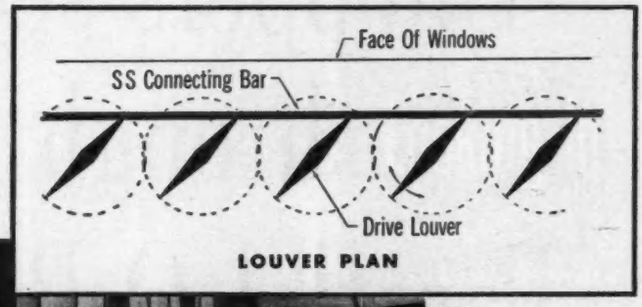
18-foot Stainless Steel Blinds shield book room from afternoon sun

Giant Venetian blinds with 20 vertical stainless steel "slats," 18 feet high, protect the rare book room of the new Cincinnati Library from the glare of the afternoon sun. These louvers are heat barriers too. By remote control they can be swiveled to interrupt the penetration of the blazing sunlight, regardless of the changing course of the sun.

In back of these louvers are plate glass windows rigidly mounted in stainless steel sash, in turn supported by stainless steel mullions and muntins. These are used throughout the building. Exterior sills are of Armco Stainless Steel, as are all convector covers, some of which are visible at the foot of the windows.

Other interior uses of Armco Stainless are conveyor doors, dumb waiter doors and cabs, elevator doors and cabs, vacuum tube stations, hand rails, mail box doors and book return door. On the exterior, entrances, doors and marquee trim are of stainless steel.

All details of this building were designed for beauty, dignity, utility and ease of maintenance. That is why stainless steel was used so extensively on the interior and exterior. If there is any question in your mind how to specify Armco Stainless Steel, just write us at the address below for our A.I.A. File pamphlet, "Why, How and Where Architects Specify Armco Stainless Steel."



LOUVER PLAN

Architects: Woodie Garber & Associates and Samuel Hannaford & Sons Associated Architects, Cincinnati.

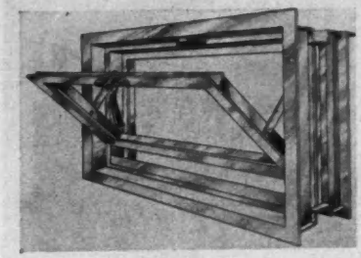
ARMCO STEEL CORPORATION 1495 CURTIS ST., MIDDLETOWN, OHIO

SPECIAL STEELS

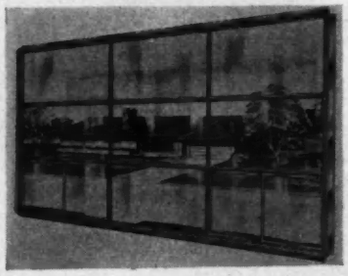
SHEFFIELD STEEL DIVISION • ARMCO DRAINAGE & METAL PRODUCTS, INC. • THE ARMCO INTERNATIONAL CORPORATION

A-E PRODUCTS

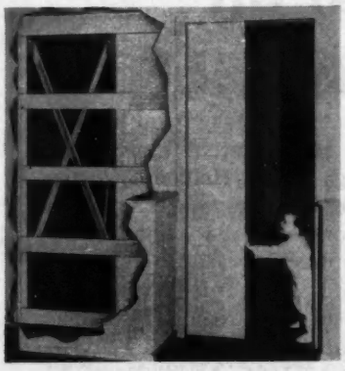
(Continued from page 233)



Windows for Glass Block Walls. The *Ualco* glass block window of heavy extruded aluminum is made for use with 6-, 8- and 12-in. glass blocks and is available with vents which either project in or project out. Frame head and sill sections are continuous over entire opening up to a maximum length of 12 ft. *Southern Sash Sales & Supply Co., 818 20th St., Sheffield, Ala.*



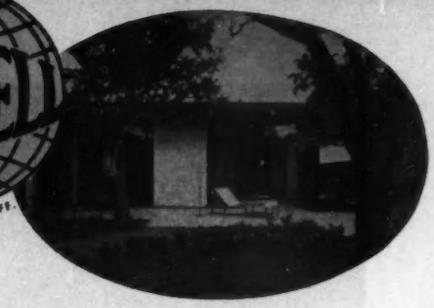
Vented Picture Window framed in heavy aluminum has sliding vented sections which move on stainless steel tracks. The window is finished in either etched satin or natural finish aluminum. *Wisco Aluminum Corp., 3945 "A" St., Detroit 16, Mich.*



Recessed Door suspended by a scissor mechanism does away with the necessity of an overhead track. With no wheels and track brackets to suspend and guide the door, operation is said to be smooth and noiseless. The Dorflo hardware is anchored within a vertical framework. *The Meta-Kote Corp., 517 Gardner Bldg., Toledo, Ohio.*

(Continued on page 244)

HUBBELL REG. U.S. PAT. OFF.



"Lowest in cost to Service"

These Eichler Homes in California are "Wired for Better Living" with Hubbell Highest Grade Wiring Devices.

LIVING-DINING ROOM
No. 1101
AC Quiet Switches . . . dependable, long life, plus quiet action and unobtrusive good looks.

KITCHEN-LAUNDRY
No. 5262
3-wire Duplex Receptacles. Accommodate 3-wire caps with U-shaped grounding blade, OR conventional 2-wire parallel blade caps.

BEDROOM
No. 9690
Duplex Convenience Outlets. Rugged construction plus smart appearance. Easy to install — trouble-free operation.

TERRACE
No. 7792
Outdoor Weatherproof Flush Receptacles. Double T-slots, brass plate, snug pressure-fit cover.

BUILDER:
J. L. Eichler and Sons, Palo Alto, Calif.
ARCHITECTS:
A. Quincy Jones & Frederick E. Emmons, Los Angeles, Calif.
ELECTRICAL CONTRACTOR:
Jones Electric Company, Inc. Hayward and Sunnyvale, Calif.

The top quality materials and methods specified by this California builder result in a house which looks better, works better, and holds its value better. Every product built into these popular houses must contribute to this end result. Hubbell is proud that its wiring devices are used exclusively. According to Jones Electric Company, Inc., electrical contractor for Eichler Homes, "Results again prove Hubbell quality *lowest in cost to service.*"

Highest Grade
HEAVY DUTY
WIRING HUBBELL DEVICES

SOLD ONLY THROUGH AUTHORIZED ELECTRICAL DISTRIBUTORS

22HH55

FACTORY WAREHOUSE LOCATIONS ASSURE NATIONWIDE STOCK AVAILABILITY

State and Bostwick Sts., Bridgeport 2, Conn. | 37 South Sangamon St., Chicago 7, Ill. | 103 North Santa Fe Ave., Los Angeles 13, Calif. | 542 Natoma St., San Francisco, Calif. | 1111 Dragon St., Dallas 7, Texas

HARVEY HUBBELL, INC. DEPT. AR BRIDGEPORT, CONN.

Hang extra sales-appeal on
MASONITE PEG-BOARD PANELS

It's so easy! You add a few strategically placed Masonite Peg-Board* Panels. In return you get terrific buyer interest all out of proportion to the low cost involved.

Your prospects are immediately intrigued by the possibilities of these versatile, durable panels. Every woman, subconsciously perhaps, starts planning how she will use the "interest walls" in living areas, knowing full well she can change arrangements whenever she wants.

But Peg-Board panels really "strut their stuff" in work areas and storage places. Helped by a wide variety of interchangeable hangers, they turn ordinary walls into "working walls", keep things orderly and within easy reach.

Where will you specify Masonite Peg-Board panels in your next house? They're sold by lumber and building materials dealers everywhere. Masonite® Corporation, Dept. AR-8, Box 777, Chicago 90, Ill.

*T. M. Reg., B. B. Butler Mfg. Co., Inc.

Look for this man He makes the difference

MASONITE CORPORATION

MANUFACTURER OF PRESDWOOD PANEL PRODUCTS

A BEAUTIFUL WAY TO KEEP ROOMS COOL

ALODIZED ALUMINUM SCREENING

No. 4 in a series on protective finishes for architectural aluminum.

Here is a new approach to the protection of homes and office buildings against sun glare and summer heat while providing extra daytime privacy and protection against flying pests. Kaiser Aluminum Shade Screening has utilized Alodine® to provide its soft, attractive, matte-green finish. This decorative value of the Alodine® finish is enhanced by the increased corrosion-resistance of aluminum that is Alodized.

Humble Oil Building, New Orleans, courtesy Kaiser Aluminum & Chemical Company.

WHAT ALODIZING IS . . . . . AND WHY YOU SHOULD SPECIFY IT.

"Alodizing" is a process using the ACP chemical "Alodine" that converts the aluminum surface to a continuous non-metallic layer. It adds years to the metal's resistance to corrosion, and provides a perfect bond for paint, lacquer, vitreous enamel and adhesives.

One type of "Alodine" protects aluminum yet preserves the original appearance of the metal; another produces a sun-fast stable green that ranges from a grey-green iridescence to the deep patina appearance of weathered copper; still another produces an iridescent brown.

All types reduce glare and reflectivity. All add to aluminum's usefulness and durability, particularly at the seaside, in industrial areas, and in contact with mortar.

IF IT'S ALUMINUM, BE SURE IT'S ALODIZED

A few of the many typical building products that should be Alodized: Roofing, Siding, Shingles, Gutters, Spouting, Jalousies, Screens, Hardware, Awnings, Blinds, Wall Tile, Sash and Door Frames, Curtain Wall Panels, Partitions, Heat and Vent Ducts, Trim, Cabinets, Refrigerating and Air Conditioning Equipment, Furniture, Light Fixtures.

For further information on Alodized aluminum, and other applications of the "Alodine" finish, write or call.

Alodine Trademark Reg. U. S. Pat. Off.

Since 1914, Pioneering Research and Development in Metal Protection

AMERICAN CHEMICAL PAINT COMPANY

Ambler, Pa.

Detroit, Mich. *Niles, Calif.* *Windsor, Ont.*

CHEMICALS ACP PROCESSES

WHY DOES CRANE GO INTO SO MANY NEW SCHOOLS?

The problem is to make today's school-building budget meet tomorrow's school needs. Crane plumbing can be an important part of the answer.

That's because Crane's wide selection of fixtures is especially suited to modern, expandable school planning. Crane fixtures are sturdy and long lasting, even under hard use. And, because of their precision engineering, they appreciably reduce the cost of plumbing repair and maintenance over the years.

The new Norman High School (Norman, Oklahoma), winner of a 1954 AIA honor award for outstanding architectural design, has Crane plumbing fixtures throughout.

Chances are Crane can help you build more school for your money, too. Ask your architect and see if he doesn't agree.

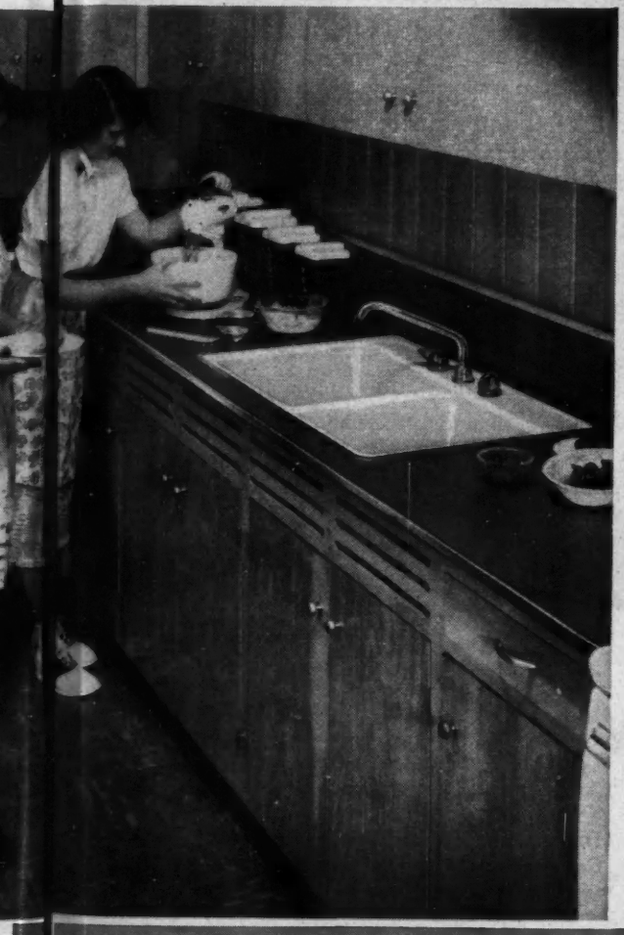
Crane Plumbing as used in the new Norman High School, Norman, Oklahoma. Drinking fountain is Clearstream 6-515. Counter-top sink installation in Home Economics Department is Crane 5-131 (cast iron). Washroom lavatories are Norwich 1-150 and urinals are Correcto 7-87.

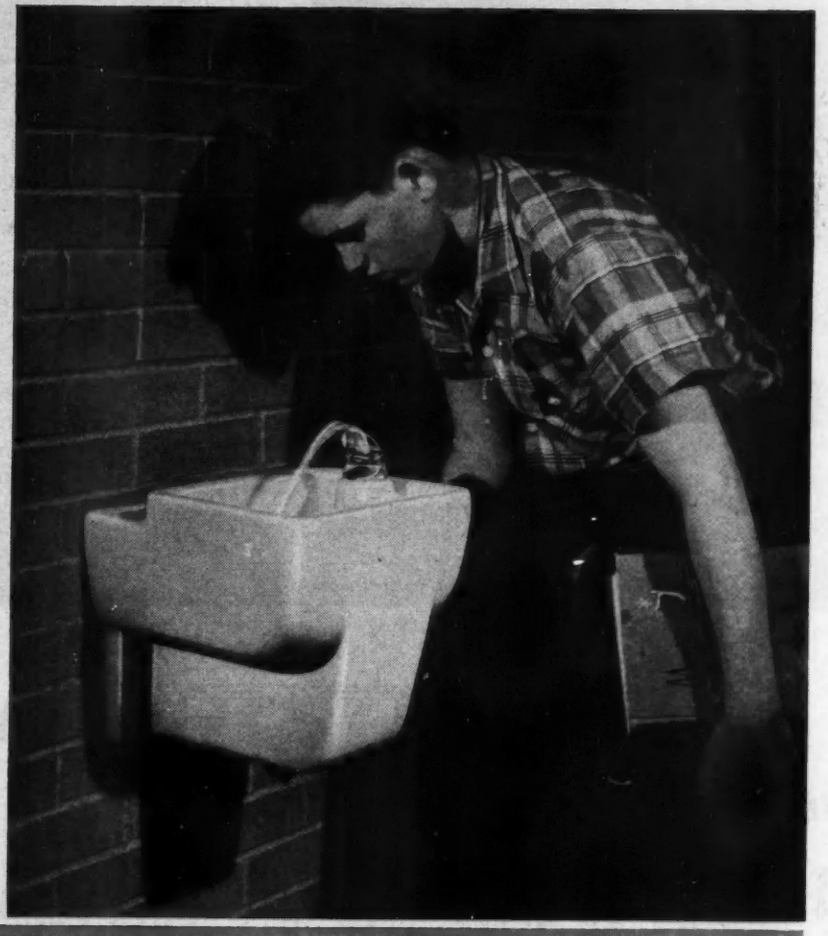
Architects: Perkins & Will, Chicago, Illinois. Caudill, Rowlett, Scott & Associates, Oklahoma City, Oklahoma.

General Contractor: Builders Construction Company, Oklahoma City, Oklahoma.

Plumbing Contractor: Fischer Engineering Company, Norman, Oklahoma.

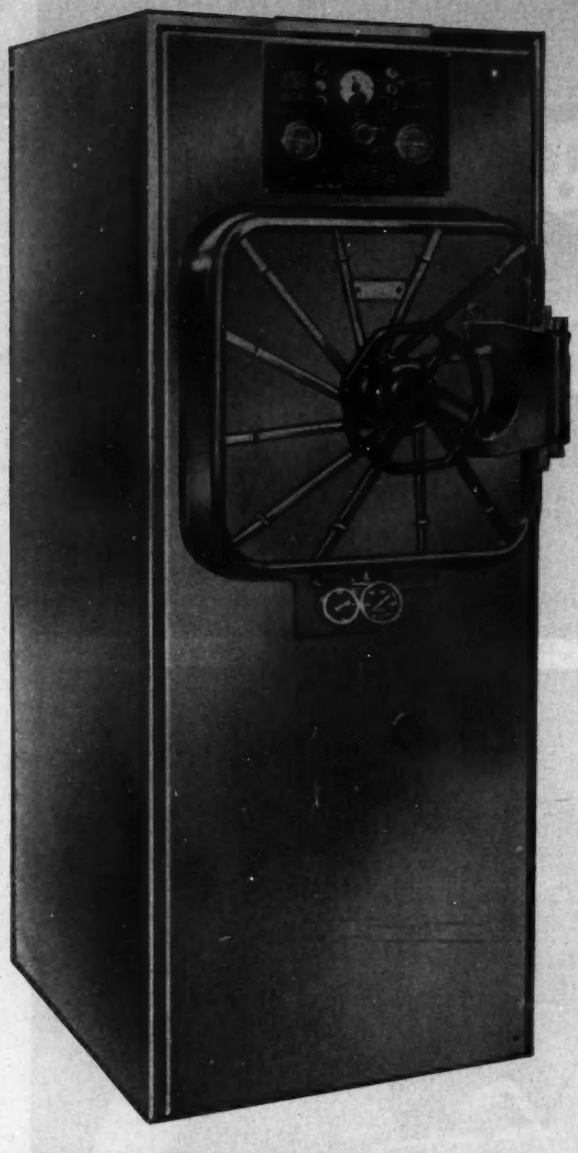
CRANE





CRANE CO.
General Offices: 836 S. Michigan Ave., Chicago 5, Ill.
VALVES • FITTINGS • PIPE • KITCHENS • PLUMBING • HEATING

CRANE STARTS
ITS SECOND CENTURY
OF QUALITY
Founded July 4, 1855



Square sterilizers save space. Nickel-Clad Steel and Monel provide the strength to resist the unequal stresses developed in these pressure units. They provide high corrosion resistance, too.

Save hospital floor space with *new, square,* Nickel-Clad sterilizers

"Square units handle 35 to 100% bigger loads" say American Sterilizer Company engineers

Think what this extra capacity means in terms of hospital design.

You can take care of a given volume of sterilizing with fewer units . . . cutting down floor space and costs. Or, in a given floor space, you can take advantage of the extra capacity to provide for future increases in sterilizing needs.

What's more, American's high capacity square units can be obtained with appliance-type cabinets.

Again, you have a choice. You can recommend conventional, in-wall, construction . . . or do away with expensive partitions, altogether.

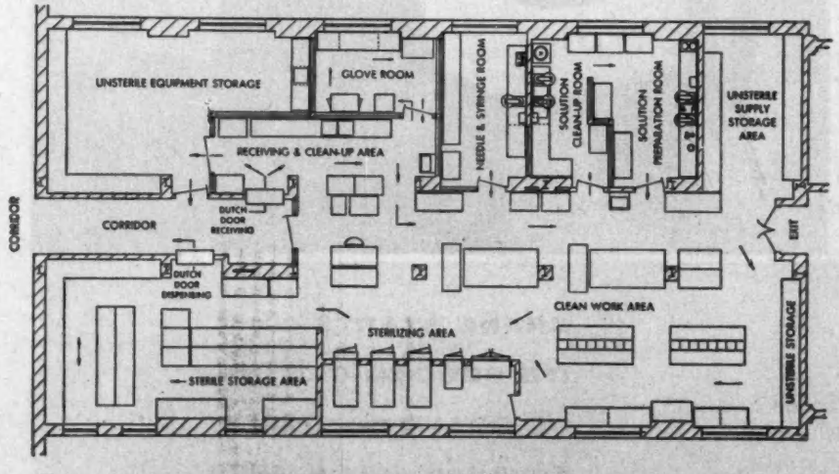
Topnotch construction, too

Nickel-Clad steel in the sterilizing chambers of these new units combines the corrosion resistance of nickel with the strength and economy of steel. Door collar, back plate, trays and racks are strong, long-lasting, corrosion-resisting Monel. Units are all-welded.

Now, you can have in pressure models the same proved construction used in bulk sterilizers.

Would you like typical sterilizing room layouts and complete specifications? Write American Sterilizer Company, Dept. 7-12N, Erie 6, Pennsylvania.

The INTERNATIONAL NICKEL COMPANY, Inc.
67 Wall Street New York 5, N. Y.



Typical floor plan suggested by American's Planning Service for a Central Supply and Sterilizing Department. American Sterilizer Co. makes this service available to architects and hospitals.

INCO NICKEL ALLOYS

Nickel-Clad Steel and Monel...for low maintenance sterilizers

Owens-Illinois super-clear Glass Block are available in 12" size (No. 470 illustrated) and 8" size.

Now Available–

THE INSULATING BLOCK YOU CAN SEE THROUGH

in 12-inch size

Now, you can design in full vision with the insulating efficiency of an 8" brick wall. Air conditioning and heating costs will be lower, too. Glass block panels are hard to break, easy for any mason to install using ordinary tools.

Owens-Illinois super-clear Glass Block No. 470 are one of the five designs in our Architectural Line. Among other designs available are random clear that permit partial vision, prismatic light-directing and solar selecting glass block that restrict sight completely and flood rooms with diffused daylight.

• • •

Write for the information you want to: Kimble Glass Company, subsidiary of Owens-Illinois, Toledo 1, Ohio.

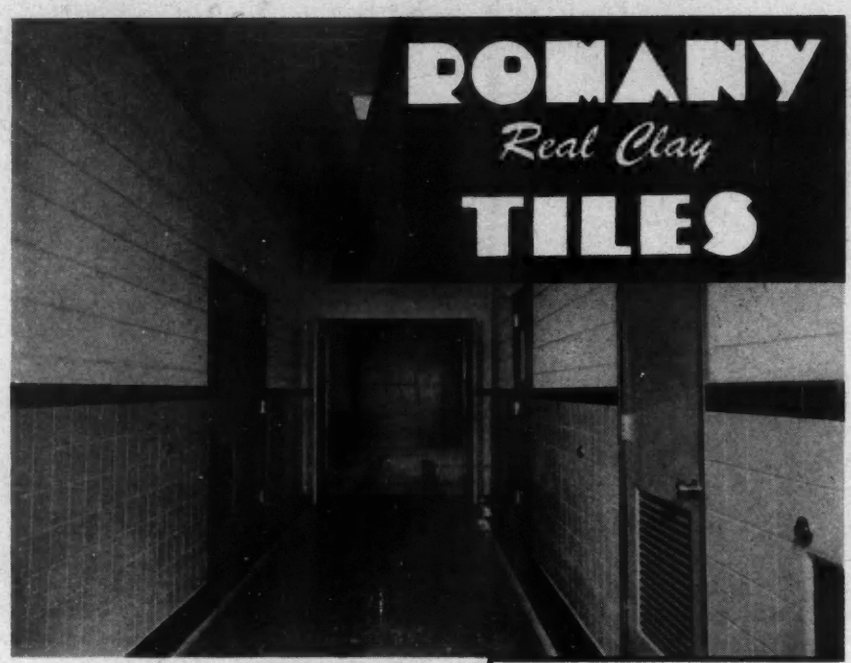
OWENS-ILLINOIS GLASS BLOCK
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

(Continued from page 237)

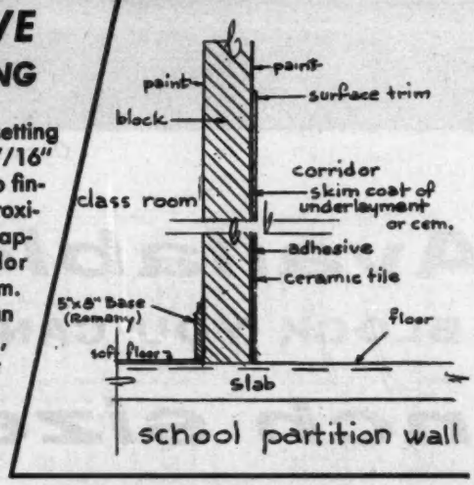
Industrial Flooring that "gives" without cracking under heavy loads, dampens shock and noise, resists alkalies and mild acids, is waterproof and has a non-slip quality is available in *Laticrete*, a combination of liquid rubber and a special cement powder. Its adhesion to concrete is 300 psi, and it also has good adhesion to clean surfaces of steel, aluminum, brick, tile and glass. It will take a compressive load of 2500 psi. A ¼-in. layer, the suggested thickness, will support heavy loads such as fork lift trucks. The light gray mix can be pigmented in a wide range of colors. It hardens in a few hours and is ready for use after curing for two or three days. *Naugatuck Chemical Div., U. S. Rubber Co., Rockefeller Center, New York 20, N. Y.*

Corrosion-proof Flooring. *Coro-Crete* provides protection against attack by alkalies, solvents and acids. Composed of a thermosetting resin liquid, a hardening agent and an aggregate-type filler, it handles like cement topping and is applied in thicknesses from ¼ in. minimum to ⅜ in. maximum per layer. It cures in a few hours to a dense, impermeable, non-dusting surface. It is recommended for existing as well as new concrete floor surfaces. *The Ceilcote Co., Inc., 4935 Ridge Rd., Cleveland 9, Ohio.*



DIRECT ADHESIVE
ROMANY TILE SETTING

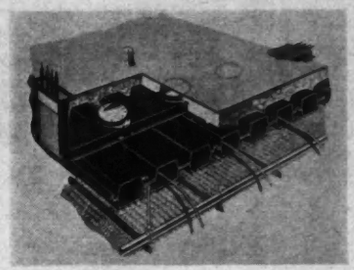
Direct adhesive ROMANY tile setting makes possible the difference of 7/16" wall thickness from rough block to finished tile, as opposed to approximately 1-1/2". This space saving, applied to a long school corridor becomes a very interesting item. Even when figured in terms of an average classroom, say 20 x 30 ft., the area saving amounts to about 8-3/4 sq. ft., a saving which can be applied to additional floor space or to reduce high cubic foot costs in school work.



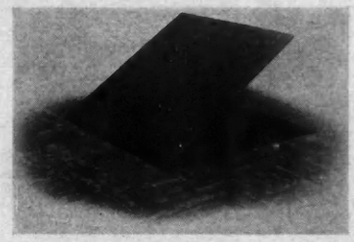
Every Architect should have our Sample Tile Chart No. 15. It's free.

UNITED STATES CERAMIC TILE COMPANY

Member: Tile Council of America and Producers' Council, Inc.
217-H FOURTH ST., N.E., CANTON 2, OHIO

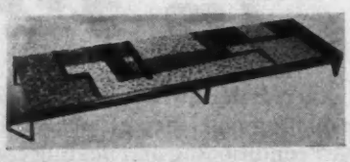


Cellular Steel Sub-flooring permits wiring of all types to be run through the floor, with electric outlets placed in any location, now or in the future. Because of its high strength and light weight, it provides a strong working surface, with the need for wood forms, scaffolding or temporary shoring eliminated. *American Steel Band Co., Box 565, Pittsburgh 30, Pa.*



Floor Access Door. *Bilco Type T door* of ¼-in. steel has an aluminum molding around the plate leaf and frame for either ⅛-in. or 3/16-in. composition flooring. Built-in lift springs provide easy one-hand operation. *The Bilco Co., New Haven 5, Conn.*

Aluminum Storm Windows and Doors incorporate baked-on enamel in green, brown, white and a natural satin finish. The Coloramic line includes a new Rac-Loc feature which permits ventilation at any point with positive window locking. *Diamond Building Products Corp., 3650 East 93rd St., Cleveland, Ohio.*



Mosaic Tables. Custom-made mosaic tile tables and murals of distinctive design and color are available from *Stewart Studio, 12 E. 62nd St., New York 21, N. Y.*

(Continued on page 248)

Want control for Water Heaters or Heat Exchangers?

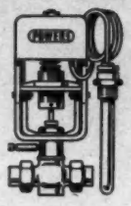
call POWERS

FLOWRITE
One of Powers Premium Quality Diaphragm Control Valves. They're simple, sturdy and dependable.

Over 60 Years of Temperature and Humidity Control

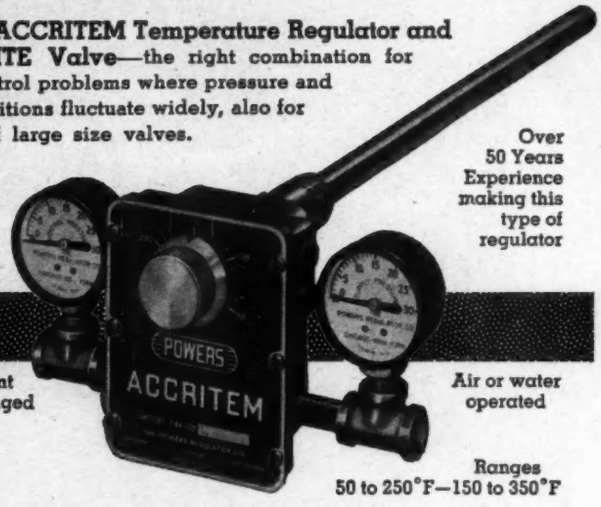
(c28a)

You Will Insure Better Temperature Control IF— you use the right type regulator and proper size control valve. Whether a simple self-operating regulator shown at left is required or the air operated controls featured here . . . you can get both types and others from Powers. For further information call or write our nearest office.



Powers ACCRITEM Temperature Regulator and FLOWRITE Valve—the right combination for many control problems where pressure and load conditions fluctuate widely, also for control of large size valves.

Over 50 Years Experience making this type of regulator

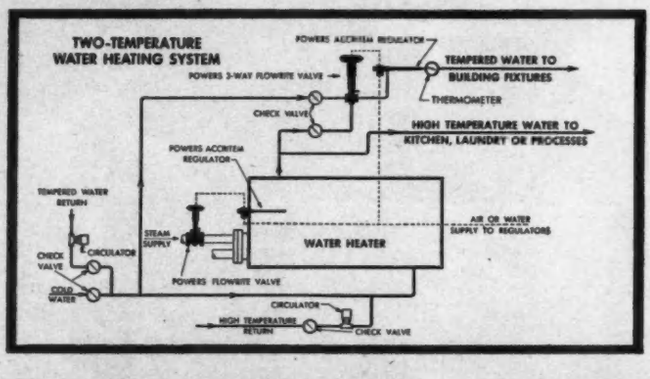


Control Point easily changed

Air or water operated

Ranges 50 to 250°F—150 to 350°F

VALVES: Available in a variety of body types and inner valves.

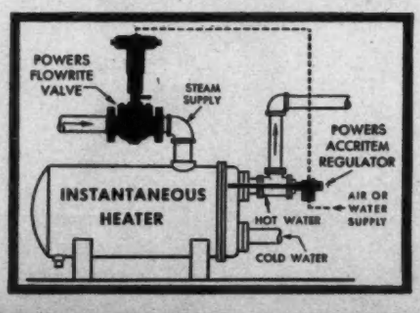


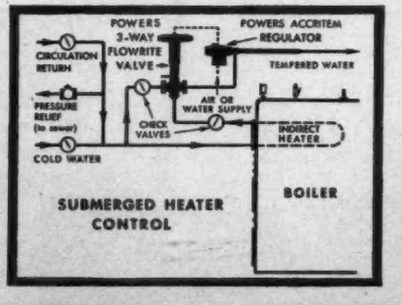
ACCRITEM TEMPERATURE REGULATOR

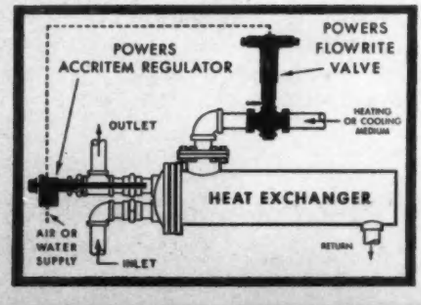
Gives Close Control and Years of Dependable Service.

- Has Adjustable Throttling Range and Calibrated Dial.
- Simple, Durable Construction assures years of trouble-free service.
- Easy to Install • Direct or Reverse Acting, reversible on the job.
- Small Size: Regulator head is 2⅞" wide, 3⅝" high, bulb is 12" long with ½" IPS Connection.

Fully Described in Bulletin 316. Write for a copy.







THE POWERS REGULATOR COMPANY | Skokie, Ill. • Offices in Chief Cities in U.S.A. Also Canada and Mexico • See your phone book

Help your clients avoid

d "fish bowl" distractions!

Actual test shows work output increased 27% after installation of VMP MOBILWALLS

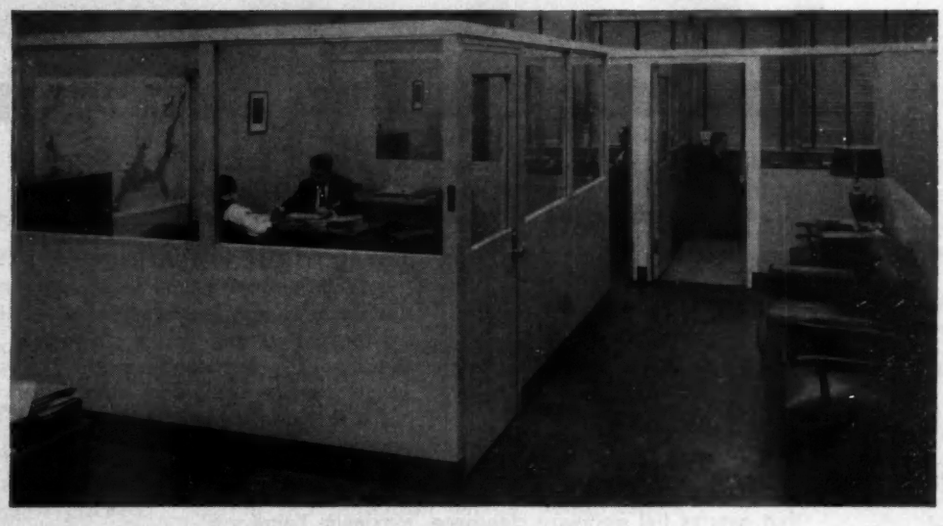
Plan your client's office with VMP's metal, movable partitioning, and he'll get permanent low-cost protection against old-fashioned "fish bowl" conditions. MOBILWALLS cut down noise, sharply reduce delays and errors. With the privacy they afford, routines run smoother, and work-stopping distractions are virtually eliminated. MOBILWALLS are ideal for every office—large or small. If you're designing a new office for your client—or revamping an old one—be sure to find out the many benefits that MOBILWALLS add to your plans.

We can show you the efficiency gains that this partitioning makes possible—how much it cuts down on costly delays. We'll demonstrate with Ratio-Delay Studies—accurate reports that rate office efficiency; they measure work output, delays, corrections, and lost motion. They show what *has* been done, let you picture what *can* be done in your client's plans.

Here's what happened in a large insurance company after MOBILWALLS were installed:

- Office productivity increased 27%
- Delays and lost motion were cut 48%
- Time spent paying attention to distractions, and correcting errors, was reduced 38%
- The VMP MOBILWALL installation helped in adding as much to work output as could have been added by a 27% increase in employees and payroll expense.

Free folder. Get complete details by writing to Department AR8 for VMP's informative folder . . . detailed data on Ratio-Delay, comparisons of partitioning materials normally used, and other valuable facts.



MODERN STYLING . . . SPEEDY INSTALLATION!

VMP MOBILWALLS are smartly designed—ideal for office or factory. They fit perfectly, are expertly finished. Colors are restful and permanent. Surfaces never chip, warp, or crack—they wash clean easily. Skilled, dependable crews take but a few hours to install these partitions. Working out of nearby warehouses, they save time and money. And clients have the satisfaction of knowing MOBILWALLS are readily adaptable to future floor plan changes—they are easily and quickly moved.

Virginia Metal Products, inc.

ORANGE, VIRGINIA

Subsidiary of Chesapeake Industries, Inc.

(Continued from page 244)

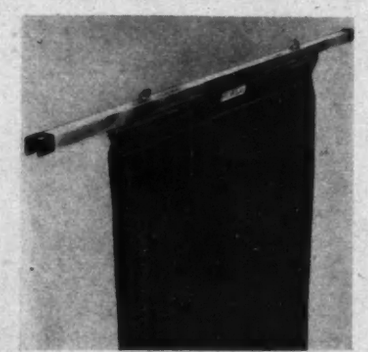
Water Heaters and water heating equipment in a new *Hevy Duty* line offer high volume and dual temperature control in domestic, commercial and industrial applications. The Jetglas Dual Temp provides 180-deg water for sanitation purposes and at the same time 140-deg general purpose water. The Jetglas Hevy Duty is available in a 45-gal size, with a Btu input rating of 51,000 for natural gas, and 70- and 100-gal sizes, with 60,000 Btu ratings for natural gas. *Day & Night Div., Carrier Corp., Ad. Dept., 700 Royal Oaks Drive, Monrovia, Calif.*

Laboratory Planning Kit makes possible planning of new laboratories or additions to existing facilities with 26 accurately scaled three-dimensional models which correspond to full-size sectional metal furniture described in the 28-page catalog which comes with the kit. Also included are ruled layout sheets scaled ½ in. to the foot. Models are

imprinted in detail and assembled for arrangement on the layout sheets. *Labline, Inc., 217 No. Desplaines St., Chicago 6, Ill.*

Cast-iron Boilers for larger buildings are oil-fired and can be fired from front or rear. They are vertical-flue-travel boilers and come in 14 sizes with IBR ratings from 1100 to 4500 for steam and 1925 to 7200 for water. *Burnham Corp., Irvington, N. Y.*

Whiteprinter. An automatic whiteprinting machine will print and fully develop whiteprints up to 70 fpm. It is manufactured in 42-in. and 54-in. sizes and is said to provide complete versatility in whiteprint production for any blueprinting or reproduction department. *The C. F. Pease Co., 3823 N. Rockwell Ave., Chicago 18.*



Plan Holder. A device for holding building or engineering plans has been designed to fit any existing plan rack or file and will hold from one to 150 prints neatly and securely without punching or drilling holes or mutilating plans. *Plan Hold Div., Air Comfort Co., 5204 Chakemo St., South Gate, Calif.*

(Continued on page 252)

Headroom to spare
with a SCHLAGE DOOR CLOSER

Top Jamb Installation with *Schlage* closer

Bracket Installation with *Other Type* closer

Schlage — leader in locks — brings you the **first** surface-mounted door closer to eliminate unsightly brackets and provide unobstructed doorway clearance . . . architecturally styled to complement modern doorway decor.

INSTALLATION VERSATILITY . . . The Schlage Door Closer incorporates mechanical design features that provide unsurpassed versatility. It's completely reversible . . . the double-ended shaft design permits quick, easy attachment of the arm on the top or bottom of the closer for installation on either side of the door, regardless of swing. Because of the reversibility of the Schlage closer, top jamb installations can be made without accessory brackets or other devices . . . an exclusive Schlage feature that assures full doorway clearance, maximum headroom.

- **Easier to Adjust** — Two simple screw adjustments provide any desired combination of swinging speed and closing force . . . in a matter of seconds.
- **Easier to Install** — Use of separate mounting plates eliminates need for holding closer during installation. Result . . . faster, simpler installation . . . real economy of time and labor.
- **Complete Swing Control** — Schlage's full rack and pinion gear mechanism gives complete control through the entire door swing. Teeth are pitched for greatest strength, permit 230° shaft rotation.

WRITE TODAY . . . for complete information on this modern Schlage closer . . . ask for Booklet 680-A8.

SCHLAGE

SCHLAGE LOCK COMPANY

San Francisco • New York • Vancouver, Canada

Write to Schlage Lock Company, San Francisco

* New headquarters of FLIGHT REFUELING, INC., at Friendship International Airport, Baltimore, Md. *Engineers and Gen. Contractor:* Armiger Construction Corporation, Baltimore, Md. *Roof Deck Applicator:* J. B. Eurell Company, Lansdowne, Pa.

FLIGHT REFUELING, INC., originators of the Probe and Drogue systems of refueling aircraft in flight, specified a fireproof Gold Bond "Firefighter" Roof Deck for their new plant at Friendship International Airport. Nearly 70,000 square feet of incombustible gypsum protects valuable refueling equipment against fire danger.

Gypsum Roof Decks go up fast... *up to 30,000 sq. ft. can be poured in a single day!* They are adaptable to all industrial roof designs—pitched, barreled or flat. The low dead load of a Gold Bond "Firefighter" Roof Deck permits lighter supporting structures, allowing substantial construction savings. Plants like FLIGHT REFUELING, INC., have lower maintenance costs with Gypsum Roof Decks. Roof surfaces can be easily cut or patched to meet any desired modification in design.

Send in the coupon below for full details, including application, specification, recommendation and limitation details, design tables, on-the-job illustrations and roof deck properties.

NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK

Build better with Gold Bond

"FIREFIGHTER" GYPSUM ROOF DECK

National Gypsum Company, Dept. AR-85, Buffalo 2, N.Y.
Gentlemen:
Please send me Technical Bulletin No. 589 with complete details on Gold Bond "Firefighter" Roof Decks.

Name _____

Address _____

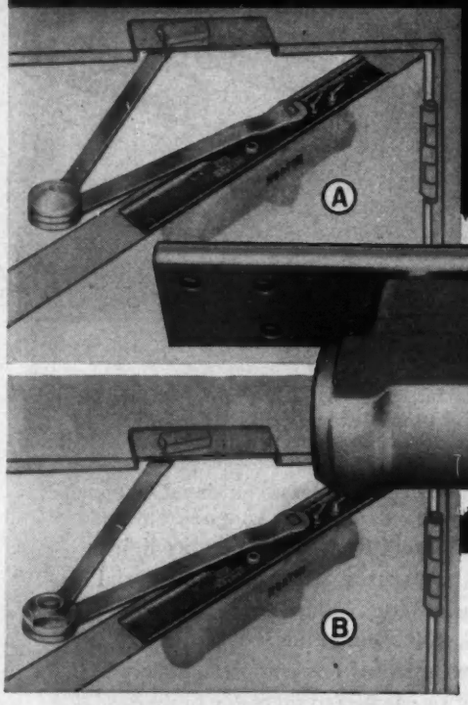
City _____ County _____ Zone _____ State _____

No Compromise on Beauty of Doors

WHEN YOU SPECIFY

NORTON *"INADOR"*

The Truly Modern Concealed Door Closer*



*Available with
Ⓐ REGULAR ARM
OR Ⓑ HOLDER ARM

Write Today for FREE CATALOG on full Norton line of concealed and surface door closers.

Only the *"INADOR"* offers all these exclusive NORTON features:

- ✓ **Rack and Pinion Construction** gives uniform, positive checking at every point!
- ✓ **New Aluminum Shell** for lighter weight, robust wear. Proved by use on our surface closers for over 7 years!
- ✓ **Special Spring**—of highest-quality steel!
- ✓ **Non-Gumming, Non-Freezing Hydraulic Fluid** permanently lubricates every inside moving part!
- ✓ **Double Adjusting Levers**, easily moved by fingers, control speed of closing action and latching action!
- ✓ **Regular Arm Series**, as well as Holder Arm models, so suitable for hospital use!
- ✓ **Famous Guarantee** for 2 full years, providing proper recommended sizes are used!

Modern Streamlined Beauty With All The Rugged Dependability That Only Liquid Door Closers Can Give

Where integrity of design is paramount Norton "Inador" offers an ideal solution. The clean-lined styling of the door is in no way impaired because "Inador's" extremely compact mechanism is fully concealed. It fits snugly into the top rail of any 1¾" door or can even be used on 1⅜" doors by taking a full cut out of top rail and applying special metal side plates.

Norton "Inador," moreover, is a true liquid door closer that will stand up under the most exacting service for years to come. Compactness has been achieved with no loss of the durability, dependability, low maintenance cost and precision workmanship so characteristic of all Norton Door Closers. For complete information on this and other Norton Door Closers, consult the complete catalog. Write for it today.

NORTON®

75 years of leadership in door closers

NORTON DOOR CLOSER COMPANY, Dept. AR85
Division of The Yale & Towne Manufacturing Company
Berrien Springs, Michigan

For HIGH STYLE or HIGH WINDS...
you can't beat a FIRE-CHEX ROOF

Look at the distinctive shadow lines, the "character," the rich color of a Carey Fire-Chex roof—and you see instantly why Fire-Chex are the crowning touch in *high fashion*. For homes, schools, apartments and commercial buildings, many leading architects specify Fire-Chex for enduring beauty without equal!

And it's beauty that's backed by husky ruggedness! After the hurricanes that ripped through the East last year, *not a single Fire-Chex roof was found to be damaged!* Many conventional roofs were ruined! What's more, Fire-Chex are the only shingles of any kind rated Class A* by Underwriters' Laboratories, Inc.—the *highest* fire-safety rating possible!

Specify Fire-Chex from a wide range of exclusive shadow blends and rich solid colors to give your buildings the utmost in protection against fire and the elements. Ask your Carey representative for samples, application data and illustrated literature.

Harmonizing New Shadow-Blend and Solid Colors

WINEBERRY RED ● GARLAND GREEN ● SILVER RAIN ● MOONMIST BUFF ● DUSK GRAY ● DELTA BROWN ● TROPIC GREEN ● VENETIAN RED ● CHARCOAL BLACK ● WALNUT BROWN . . . and CRYSTAL WHITE.

**Without asbestos underlayment.*

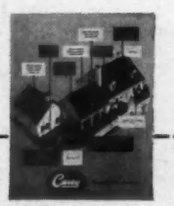
Carey

THE PHILIP CAREY MFG. COMPANY, Lockland, Cincinnati 15, Ohio
In Canada: The Philip Carey Co., Ltd., 277 Duke St., Montreal 3, P.Q.

Better products for better building since 1873

Bathroom Cabinets and Accessories • Ventilating Fans • Access Doors
Ceramo Asbestos Siding • Thick-Butt Shingles • Reflective Fire-Guard
Blanket Insulation • Fire-Chex Asbestos-Plastic Shingles

FREE FOLDER! *Mail coupon today for free copy of folder showing Fire-Chex Shingles and other fine Carey products in full color! Or see A.I.A. File No. 12.*



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☐ Please send my free copy of folder and complete information on FIRE-CHEX SHINGLES.
☐ Ask your representative to call.

NAME_____

FIRM_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

this coupon brings you newest data on planning modern building entrances

REVOLVING DOOR ENTRANCE DIVISION
INTERNATIONAL STEEL COMPANY
2051 Edgar Street, Evansville 7, Indiana
Send me without obligation my personal copy of the new International "Entrance-Planning Manual":

NAME and POSITION _____

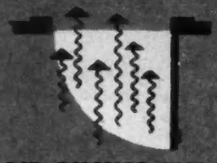
FIRM _____

ADDRESS _____

CITY _____ ZONE ____ STATE _____

HOW REVOLVING DOORS cut air conditioning costs

REVOLVING DOORS STOP AIR FLOW AT ENTRANCE



AIR RUSHES THROUGH OPENED SWING DOORS

The "Always Open — Always Closed" design of revolving doors assures a constant barrier against all but a merest trickle of outside air, even when entrance traffic is heaviest. Swing doors sweep in over 100 times as much hot, dirty, off-the-street air with each in-or-out passage!

Uncontrolled entrance of hot, humid outside air — or escape of cooled inside air — ends with the installation of a revolving door entrance. All area right up to the doors is kept uniformly cool and comfortable. Failure of cooling systems due to overloading is held to an absolute minimum. In fact, systems of less capacity can be specified . . . safely and at sizable savings . . . by including revolving doors in original building plans. And savings on *year-round* air conditioning costs average 25% or more, as proved by hundreds of tests in every part of the country! There's a host of cost-cutting facts like this in the new International Entrance-Planning Manual. Use the above coupon now!

International Revolving Door Entrance at the Hotel Statler, New York City.

See Sweet's Architectural File or classified section of your Telephone Directory

INTERNATIONAL ALWAYS OPEN ALWAYS CLOSED VAN-KANNEL

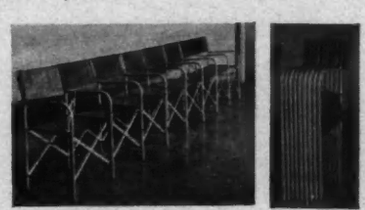
REVOLVING DOOR ENTRANCE DIVISION
2051 EDGAR ST. • EVANSVILLE 7, IND.

INTERNATIONAL STEEL COMPANY

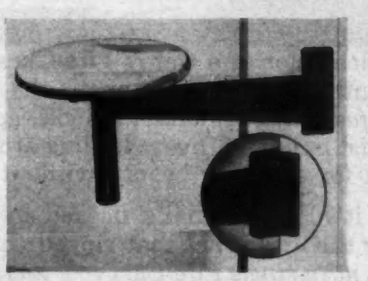
AH PRODUCTS

(Continued from page 248)

School Furniture, including stacking chairs, combination lift-top desk-chair and single and double pedestal desks, consists of a tubular steel frame with 11-ply hardwood writing surfaces. Proper posture is assured by a 5-deg pitch on backs of chairs and a 3-deg pitch on the seats. *Kuehne Mfg. Co., Mattoon, Ill.*



Accordion Chairs of anodized aluminum, available in units from 1 to 8 with each seating unit weighing only 4¾ lb, fold together for easy storage. Seat or back covers of duck or dark green plastic coated duck can be replaced individually. *Nathan Straus-Duparquet, Inc., 33 E. 17th St., New York 3, N. Y.*



Swing Arm Seat with a 5-in. adjustment up or down has an arm bracket 12 in. long for round seats and 17 in. long for seats with backs. It can be mounted on a flat surface, as in the large photo, or on corners, as in the inset. The seats come in a wide variety of colors and finishes and can be upholstered. *The Chicago Hardware Foundry Co., North Chicago, Ill.*

Colored Plumbing Fixtures. "Venetian Rose" is the latest color to be added to color line of *Ingersoll Plumbing Products, 1000 W. 120th St., Chicago 34.*

(Continued on page 256)

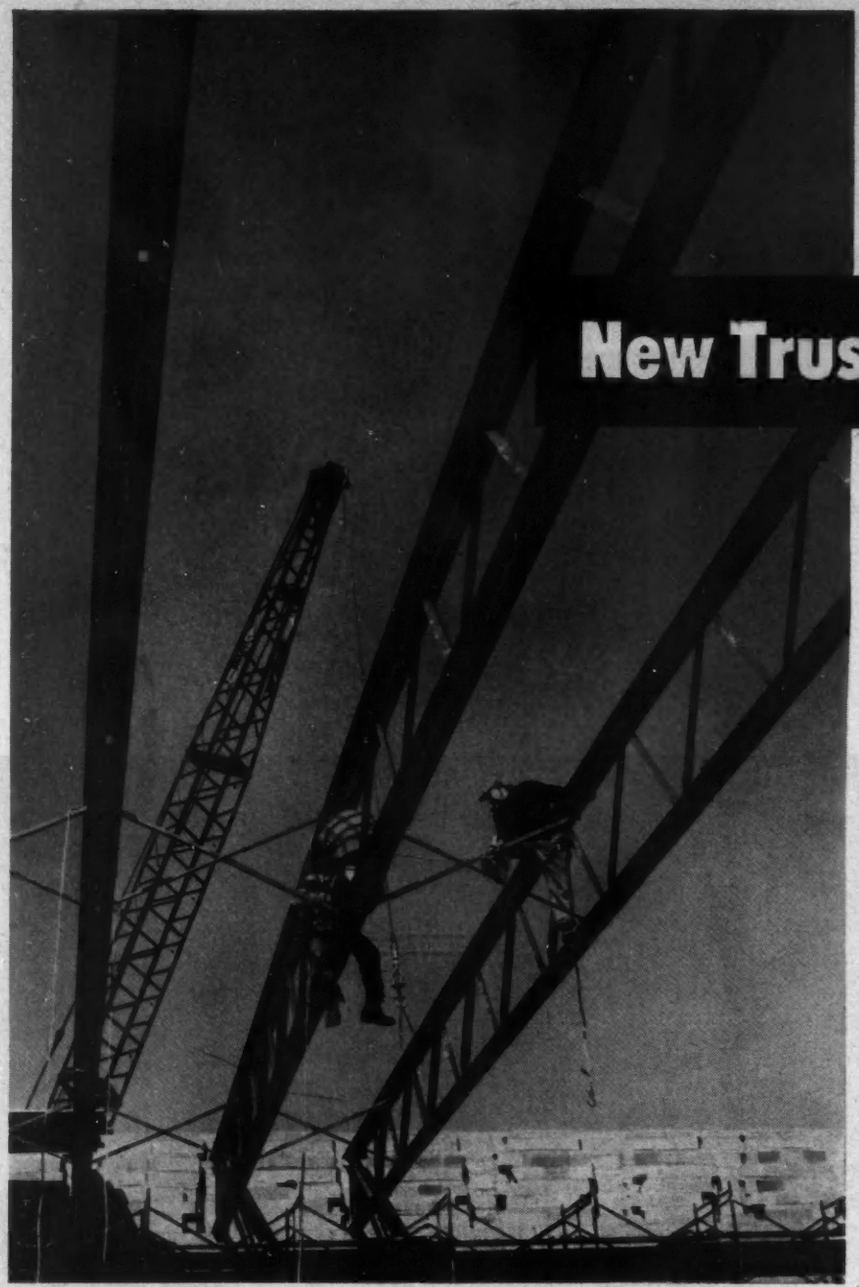
SIMILAR TEXTURES
AND COLOR
FOR BOTH INTERIORS
AND EXTERIORS
ARE PRACTICAL
WHEN REDWOOD
IS SPECIFIED.
IT IS BOTH
BEAUTIFUL AND
DURABLE.

GRADE MARKED • TRADE MARKED CALIFORNIA REDWOOD

CRA CERTIFIED DRY 12 A-RWD

GEORGE VERNON RUSSELL, AIA, ARCHITECT

CALIFORNIA REDWOOD ASSOCIATION
576 SACRAMENTO STREET
SAN FRANCISCO 11, CALIFORNIA



Truscon 96-foot Clerespan Steel Joists erected in Oblates of St. Francis De Sales High School, Inc., Toledo, Ohio. Bentz and Bankemper, architects; Henry J. Spieker Company, contractor.

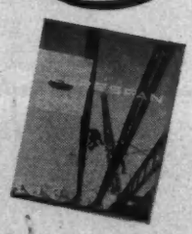
New Truscon Steel Joist

CLERESPAN® JOIST WITH WARREN-TYPE TRUSS DESIGNED TO MEET ALL LOADING CONDITIONS

REPUBLIC STEEL CORPORATION
3110 East 45th Street
Cleveland 27, Ohio

I'm interested in ideas for building. Please send information checked:

- ☐ New Truscon Clerespan Steel Joist catalog.
- ☐ Truscon Metal Lath catalog.
- ☐ ELECTRUNITE E.M.T. catalog.
- ☐ Truscon Ferrobord Steeldeck catalog.



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Firm_____

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R-9681

MORE REPUBLIC BUILDING

YOU ATTACH TRUSCON METAL LATH directly to underside of joists as a plaster base. Metal lath and plaster ceilings resist cracking, provide exceptional fire resistance, can be shaped and curved in pleasing design. Truscon makes more than 40 different metal lath items and accessories. All are quickly available through Truscon warehouses.

design provides a 96-foot clear span

Merchandisers and manufacturers . . . storage depots and service establishments . . . showrooms and supermarkets . . . all are trending toward wide, unobstructed floor space. Now, Truscon brings you a Clerespan (Longspan) Steel Joist that provides a full 96-foot-wide span free from the need for intermediate supporting columns.

To meet all types of loading conditions, the new Truscon Joist design utilizes a Warren-type truss. Joist depth is standardized at 18 inches to 48 inches. This relatively shallow depth allows pleasing exterior design and saves in masonry work by reducing the required height of building walls. The light weight of Clerespan Joists allows more savings in lighter framing and footings.

Standard pitched top chords provide for roof drainage with level ceilings. A Truscon Metal Lath and plaster ceiling, suspended directly from the underside of the joists, provides low-cost fire resistance. Open web of joists provides ready passage and concealment of ducts, pipes, and electrical conduit.

A new Truscon catalog giving interesting facts, dimensions and loading tables for Clerespan Steel Joists up to 96 feet in length was mailed in May to our list of architects. If you did not receive your copy, kindly ask for it by sending in the attached coupon.

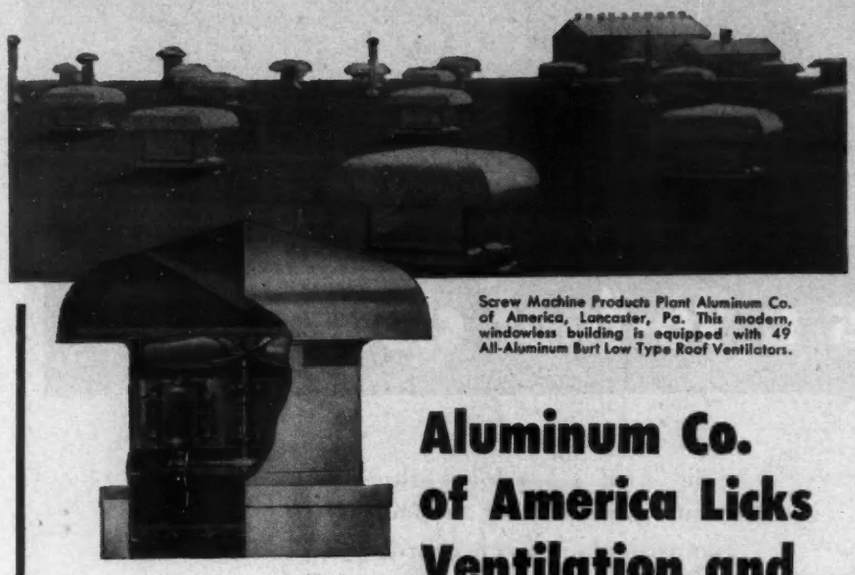
REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products

PRODUCTS SPECIALLY SUITED TO STEEL JOIST CONSTRUCTION

REPUBLIC ELECTRUNITE® ELECTRICAL METALLIC TUBING passes easily through the open web of steel joists. Every coupling is a union—no lines to turn. ELECTRUNITE E.M.T. is Republic's lightweight rigid steel raceway that protects wiring circuits against fire, moisture and mechanical injury. It's inspected by Underwriters' Laboratories, and approved by the National Electrical Code for exposed, concealed and concrete slab construction.

ROOF THE JOB WITH TRUSCON FERROBORD® STEELDECK. Clip or weld Ferrobord directly to Truscon Steel Joists. It comes in lengths long enough to span three or more purlins, roofs large areas quickly . . . flat, pitched, or curved. Exclusive Truscon design allows full-length interlocking, gives greater strength. Installs from the top; no scaffolding required. Write for specifications.



Screw Machine Products Plant Aluminum Co. of America, Lancaster, Pa. This modern, windowless building is equipped with 49 All-Aluminum Burt Low Type Roof Ventilators.

Aluminum Co. of America Licks Ventilation and Oil Mist Problem

With Burt Low Type Ventilators

THE PROBLEM—The modern building design selected for Alcoa's new Screw Machine Products Plant is practically free of wall openings. Its 200,000 square feet of floor space has no cross circulation or natural ventilation. Production operations create considerable heat and oil mist.

THE SOLUTION—Forty-nine 48" all-aluminum Burt Low Type Roof Ventilators are used to maintain a pleasant working atmosphere the year around. Oil mist is scarcely discernable. Twenty-five of the Burt ventilators supply air. The remaining twenty-four function as exhaust ventilators.

COMPARATIVE COST—The high volume air supply utilized here is relatively inexpensive. According to the Alcoa Staff Engineer for Air Conditioning, the initial cost of air supplied by the Burt Low Type Roof Ventilators is less than one-fourth that of a centralized duct system.

SUGGESTION—If you are looking for fresh air at low cost, investigate Burt's complete line of modern, efficient roof ventilators.

Send for **FREE** *Data Book!*

Write for Burt Data Book SPV-101-E. It supplies quick data on Burt's complete line of modern Roof Ventilators.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company

48 E. South St. Akron 11, Ohio

MEMBER POWER FAN MANUFACTURERS ASSOCIATION

AE PRODUCTS

(Continued from page 252)

Aluminized Steel. *Armco Aluminized Steel (Type 2)* is a general service material that combines the heat-reflecting and atmospheric corrosion-resisting qualities of aluminum with the high strength of steel. The aluminum-coated steel sheet is used widely in construction, as in the roof deck pictured, for sidings, roofs, rolling doors and even as carports in residences. *Armco Steel Corp., Middletown, Ohio.*

Fire Detection Device. The *Detect-O-Stat*, a thermostatic warning device, has two temperature-sensitive contacts. The first contact closes at 135 F, activating bells or alarm lights to provide detection of a local fire as temperature rises. The second contact closes at 155 F to set off further audible or visual signals at a central control station in the event the first signal goes unheeded. A third contact is set for 35 F to prevent damage to perishable merchandise as a result of cold. *Detect-O-Stat Co., Inc., 3117 Washington Ave., Racine, Wis.*

Knorr Interior Planning offers interior planning and coordination services and provides showroom sales facilities for architects, designers and their clients. They display the works of George Nelson, Charles Eames, Alexander Girard and Isamo Noguchi, *K.I.P. Inc., 720 Montgomery, San Francisco, Cal.*

Rolltop Desk has a white Micarta top with a cast aluminum base in either black or white. It is 44 in. high, 42 in. wide and 24 in. deep. *Herman Miller Furniture Co., Zeeland, Mich.*

AND NOW...A ROOF SCUTTLE THAT'S EVEN BETTER!

NEW BOX TYPE COVER FOR EXTREME RIGIDITY
NEW ONE HAND OPERATION
NEW COMPRESSION SPRING OPERATORS
NEW HEAVIER CURB INSULATION
Bilco

A new improved BILCO roof scuttle . . . the result of two years of development. Featuring new "floating" cover with tubular spring operators, glass fibre insulation and even more convenient one hand operation.

New design also makes possible a wider range of special sizes. You give your clients the very best roof scuttle when you specify BILCO. Complete details in the 1956 catalog shown below.

Bilco®

AMERICA'S FINEST ROOF SCUTTLE

THE BILCO CO., DEPT. 41, NEW HAVEN, CONN.

JOHNSON CONTROL at NORTHLAND Insures

Expert opinion rates Detroit's remarkable Northland Center as not only the largest of all shopping centers, but as the most nearly perfect in providing *total* comfort and convenience for its patrons.

The comfort *control* problems involved here are particularly interesting. The year 'round air conditioning system involves 72 air handling units in the six buildings. For economy, a central plant supplies all steam and chilled water.

The *number* and *sizes* of the individual stores are important considerations. The 90 tenant stores range upwards in area from a few hundred to tens of thousands of square feet. Comfort requirements also differ by *types* of stores—nearly every kind of retailing operation is represented at Northland!

Occupancy levels change throughout the day. An average of 45,000 people shop here daily. Peak traffic reaches 68,000. Other variables include *outdoor temperatures, wind, exposure* and *large glass areas.*

To solve these and similar comfort control problems correctly, Northland Center depends on a comprehensive system of Johnson Automatic Temperature Control. Johnson engineers designed an up-to-the-minute control system that provides *ideal temperatures in every sales area in every store at Northland.* It insures tenant satisfaction and caters to customer comfort. And, equally important, the superior economy features of Johnson Control make it possible to accomplish all this at the *lowest possible* operating cost.

Next time you have a temperature control problem, give yourself the benefits of this kind of modern temperature control engineering skill. Whether it's a shopping center, store, office building, school, hotel, hospital or factory, a nearby Johnson engineer is ready with the best answer. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

JOHNSON CONTROL

TEMPERATURE ↕ AIR CONDITIONING

PLANNING • MANUFACTURING • INSTALLING • SINCE 1885

Appealing displays and assured comfort tempt customers to Hudson's Basement Store. More than 300 Johnson Thermostats at key locations in Hudson's and the 90 other stores respond to the slightest demand for more or less heating or cooling.

Conditioned air for small tenant shops is supplied by multi-zone air handling units. A single unit may handle 2, 4, 6 or 8 shops. Each shop has individual temperature control. Entrance heaters are also controlled.

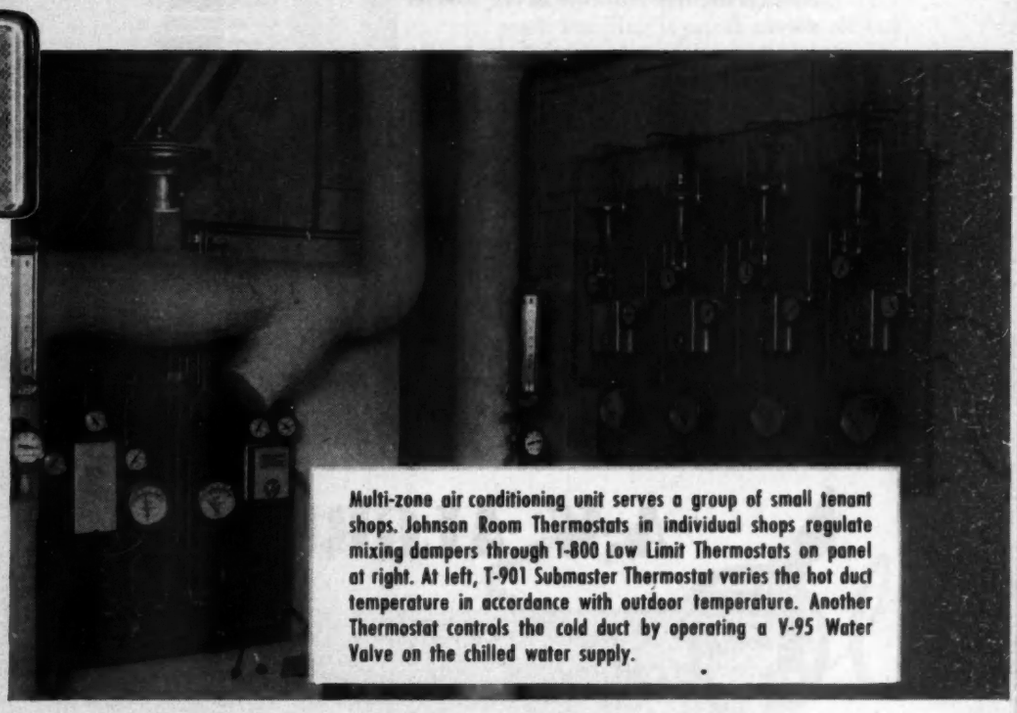
Larger tenant spaces have separate air handling units and controls. Solving the great variety of control requirements at Northland is an excellent example of the flexibility of Johnson Control.

Northland Regional Shopping Center, Detroit, Michigan. Architect: Victor Gruen Associated Architects & Engineers, Inc. Consulting mechanical engineer: H. E. Beyster & Associates, Inc. Heating contractor: The Donald Miller Co. Air conditioning contractor: Carrier Corporation.

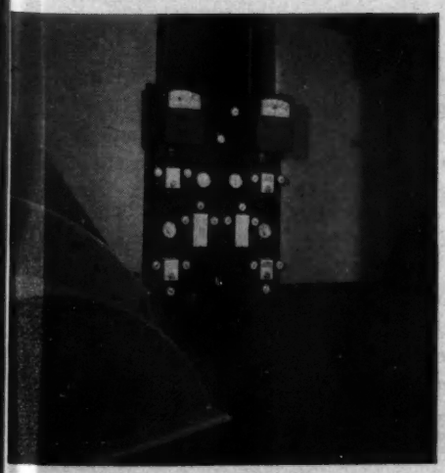
NORTHLAND HIGHLIGHTS. World's largest shopping center. Includes The J. L. Hudson Co. Department Store (over 470,000 sq. ft.) and 90 shops in 5 other tenant buildings (over 525,000 sq. ft.). Hudson store is the largest built in over 25 years. Center is completely air conditioned, with 3,600 ton central refrigeration plant and 900 hp central steam plant. Store frontage totals 1¼ miles. In Hudson's alone, there are nearly 10 miles of heating, ventilating and air conditioning ducts.

Ideal Temperatures for 45,000 Shoppers a Day!

READ HOW THIS JOHNSON-ENGINEERED CONTROL SYSTEM PROVIDES MADE-TO-ORDER WEATHER FOR EACH OF 90 STORES . . . HELPS LARGEST SHOPPING CENTER GET THE ECONOMIES OF CENTRAL STEAM AND REFRIGERATION PLANTS



Multi-zone air conditioning unit serves a group of small tenant shops. Johnson Room Thermostats in individual shops regulate mixing dampers through T-800 Low Limit Thermostats on panel at right. At left, T-901 Submaster Thermostat varies the hot duct temperature in accordance with outdoor temperature. Another Thermostat controls the cold duct by operating a V-95 Water Valve on the chilled water supply.



Panel mounted controls for twin air handling units in the Hudson store. On each unit a Johnson Submaster Thermostat controls a Steam Valve on the reheat coil to regulate final discharge temperature of conditioned air. Correct discharge temperature is determined by strategically located Room Thermostats that average sales area temperatures and pilot a Pressure Regulator which resets the Submaster Thermostat.

On adjoining units, powerful Johnson Damper Operators regulate Dampers on minimum and maximum outdoor air and return air as determined by Dew-point Thermostats. Another Thermostat on the unit at right acts as a Safety Thermostat on the Steam Valve. Hudson store is served by 18 large built-up units, 14 of which are installed in pairs as shown.

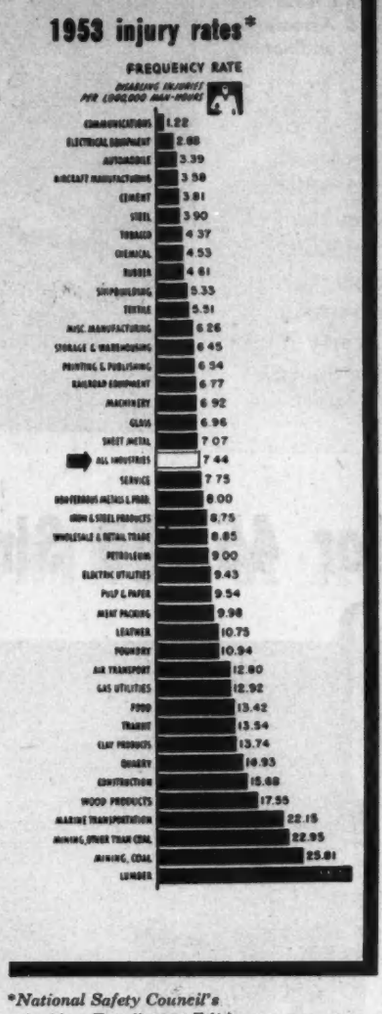
The COMPANY TREASURER knows

. . . that safety against slipping on plant floors is an unseen factor in the balance sheet . . .

. . . that every plant equipped with ALGRIP Abrasive Rolled Steel Floor Plate reduces its accident rate . . . its lost man-hours of production . . . its compensation payments . . . and its insurance rate . . .

Because ALGRIP . . . the world's only abrasive rolled steel floor plate . . . has a surface that makes slipping practically impossible . . . on level floor or incline . . . wet, oily or greasy . . .

And because ALGRIP's controlled-depth of abrasive penetration in the plate assures a constant, enduring anti-slip floor surface.



National Safety Council's "Accident Facts" 1954 Edition

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE

ALGRIP—*Approved for Safety by Underwriters' Laboratories.*

ALAN WOOD STEEL COMPANY
Conshohocken, Pa.

Please send A.W. ALGRIP Booklet AL-2

Name_____

Title_____

Company_____

Address_____

City_____ Zone_____ State_____

Other products: A.W. SUPER-DIAMOND Rolled Steel Floor Plate—Plates —Sheets—Strip—(Alloy and Special Grades)

AE LITERATURE

(*Continued from page 206*)

Cooling Tower Design features of a *cooling tower line* are explained in a 12-page illustrated catalog which includes rating tables and capacity data. *Cooling Equipment Div., Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill.*

Panic Exit Devices. A 20-page catalog with photos and descriptions of panic exit devices also includes supplementary detail sheets. *Sargent and Greenleaf Inc., Rochester, N. Y.*

Rust Prevention. The qualities and applications of Rust-Oleum preventive coatings, with 98 color chips, are included in a new 24-page general catalog released by *Rust-Oleum Corp., 2799 Oakton St., Evanston, Ill.*

Voltage Distribution Systems. A 24-page brochure explains the principles of 480Y/277-volt power distribution systems and describes in detail the layout of a typical installation recommending the type of equipment best suited for particular installations. *GEA-6223, Advertising & Sales Promotion, General Electric Co., Plainville, Conn.**

Touch-Plate System. "Electricians Handbook of Touch-Plate" explains in 32 pages the two-wire, low-voltage switching system. *Touch-Plate Mfg. Corp., P. O. Box 1970, Long Beach 1, Calif.*

Lens for Lighting Equipment. *Amcolenses* for unified lighting are described and illustrated in a 60-page brochure. *Art Metal Co., Cleveland 3, Ohio.**

Incandescent Lighting. Cast aluminum, anodized lighting designs for exterior and interior use are described and illustrated in a 4-page brochure. *McPhilben Mfg. Co., Inc., 1329 Willoughby Ave., Brooklyn 37, N. Y.**

Radial Underfloor Slab Duct Heating Systems. An illustrated specification sheet contains specifications, dimensions and detailed plans for installing *Ceramiduct* warm air heating systems in homes. *Straitsville Brick Co., New Straitsville, Ohio.*

Home Floors. Practical advice on selecting and caring for home floors is presented in an 8-page circular by the *University of Illinois Small Homes Council, Urbana, Ill.*

(*Continued on page 264*)

Servel Air Conditioning Tames Arizona Temperatures in Historic Cathedral

This air conditioning problem had special restrictions. Church officials requested: "No noise. No existing structure must be disturbed. The altar candles must not flicker."

Quite an order for the Servel dealer, Hearn Plumbing & Heating, Inc., who air-conditioned Tucson's historic San Agustin Cathedral.

Two Servel 25-ton Water Chillers solved the problem neatly. The equipment was placed behind the church in a small building that was formerly used for storage. From this small building is piped all the chilled and hot water which completely air-conditions the church with hardly a sound. Nothing is visible to disrupt the church's beauty.

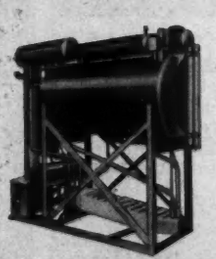
These units make this spiritual haven a physical haven as well. More than 6000 square feet of space is cooled, providing air-conditioned comfort for over 1000 worshipers at a time.

When you consider air conditioning, *look* to Servel. *Specify* Servel for maximum efficiency and minimum operating and maintenance costs. For further facts and engineering assistance, see your dealer or send coupon.

Servel

the name to watch for great advances in

AIR CONDITIONING ✓ REFRIGERATION



Servel 25-ton Water Chiller has no moving parts. Operates without vibration and wear, even at peak loads. Carries 5-year warranty.

SERVEL, INC., Dept. AR-85
Evansville 20, Indiana

Send me specifications and full information on Servel Water Chillers.

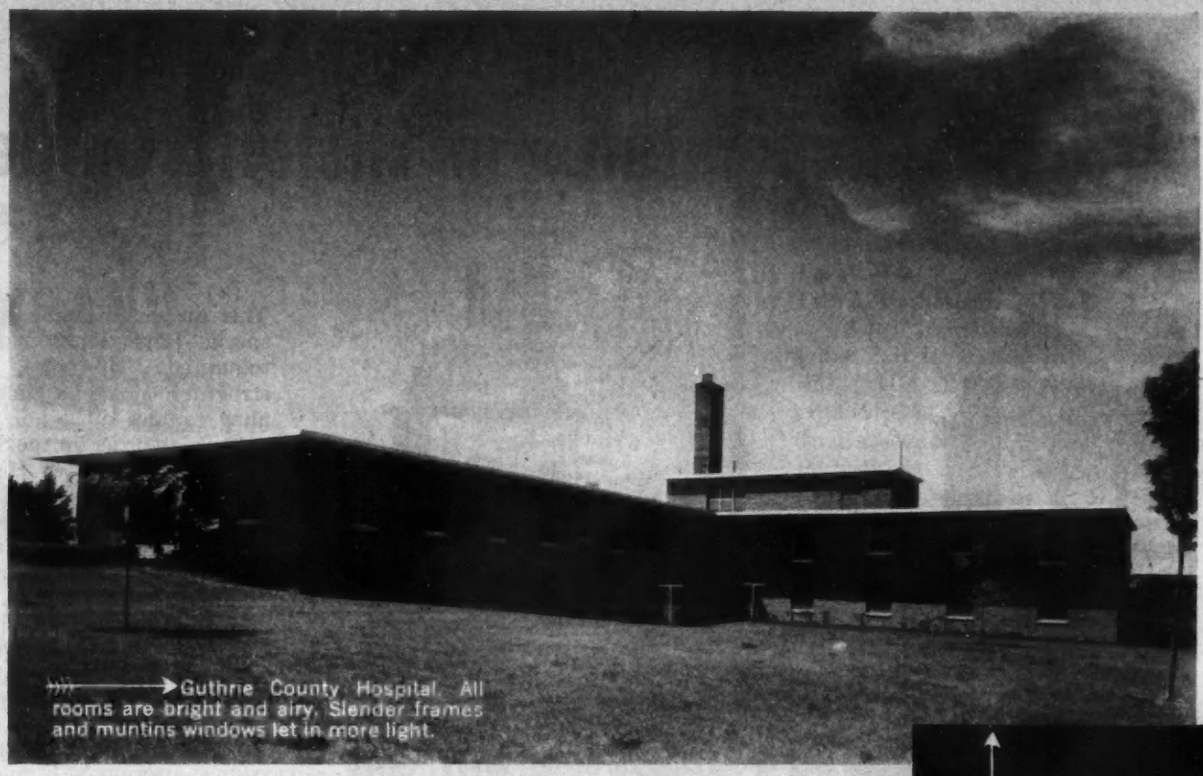
Name_____

Firm_____

Address_____

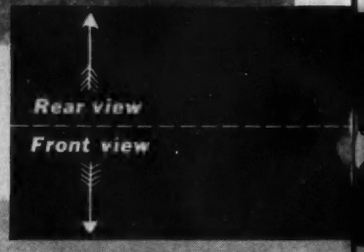
City_____ Zone_____

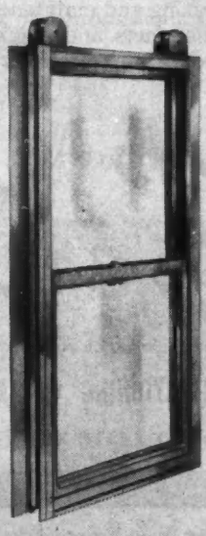
County_____ State_____



Guthrie County Hospital. All rooms are bright and airy. Slender frames and muntins windows let in more light.

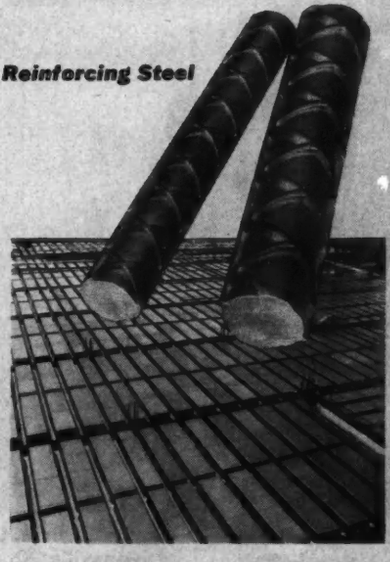
ANY WAY YOU LOOK AT IT, CECO WINDOWS ARE THE BUY FOR HOSPITALS





Ceco-Sterling Aluminum Series 150-B Window.
All sections are specially extruded alloy assuring maximum strength. Horizontal sections are tubular or box sections for greater strength at points of strain. Stainless steel weatherstripping.

Reinforcing Steel



Ceco-Meyer Steelforms were used for the concrete floor joist construction of the hospital, assuring a firesafe building at low cost. Ceco also provided the reinforcing steel, cutting and bending it to fit the job.

Do aluminum windows cost more?

NO...NOT EVEN IN A SMALL HOSPITAL

How about maintenance?

CECO-STERLING ALUMINUM WINDOWS SAVE $1.00 PER WINDOW EACH YEAR BECAUSE THEY NEED NO PAINTING

This is a story of how a small hospital "afforded" better windows on a limited budget. The answer is simple . . . they didn't cost any more. But let's start at the beginning. As architects Tinsley, Higgins, Lighter & Lyon drew plans for the Guthrie County Hospital, Guthrie Center, Iowa, it was evident all products going into the structure would have to be carefully compared as to cost. So, when it came to windows, first thinking ruled out aluminum. But close examination showed Ceco-Sterling Aluminum 150B Double-Hung Windows cost no more than a competing wood product. And when anticipated maintenance costs were considered, Ceco-Sterling Aluminum Windows showed a saving of $1.00 per window per year, compared to wood windows which the hospital figured would need painting every four years at a cost of $4.00 per window. So, if your problem is building a small hospital on a modest budget, don't pass up Ceco-Sterling Aluminum Windows because you "think" they cost too much. Call in Ceco Engineers . . . chances are they can show you how you will actually save with Ceco-Sterling Aluminum Windows . . . so well made they'll outlast any structure. (CECO STEEL)

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IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

Guthrie County Hospital. Notice how the trim windows complement modern architectural lines. Architect: Tinsley, Higgins, Lighter & Lyon, Des Moines, Iowa. Contractor: Spencer Construction Company, Spencer, Iowa.

WHAT'S NEW in roof deck?

Ingersoll Aluminum Roof Deck:

No painting necessary, fast, easy installation

introduces new concept to roof deck engineering.

This new roof deck, the result of extensive research and development by Borg-Warner engineers, provides a distinctive industrial ceiling at important savings in time, trouble and money.

1. ***Eliminates field and maintenance painting.*** Consists of aluminum panels supported by galvanized steel sub-purlins—both materials permanently strong and attractive, require no external finish.

2. ***Engineered for fast positive installation.*** A full-floating modular system permits freedom for expansion and contraction. To erect, just weld sub-purlins to building purlins and secure panels to sub-purlins with simple slide-on clips.

3. ***Has insulation value.*** Aluminum panels reflect radiant heat, materially reduce insulation requirements.

4. ***Has high load-bearing capacity.*** Certified copies of Pittsburgh Testing Laboratory tests showing exceptional strength will be promptly submitted on request.

Other advantages. Continuous beam action of long sub-purlins; ideal accessory and utility accommodation; built-in guttering which prevents roof adhesive drippage. High reflectivity increases efficiency of any lighting system.

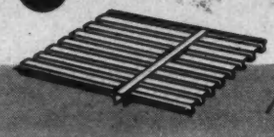
Ingersoll Porcelain Enameled Roof Deck

Designed on same new principles as Ingersoll Aluminum Roof Deck. Steel decking is double-coated with tough, chemically inert porcelain enamel. Ideal for use where moisture or corrosion is a problem or where porcelain's gleaming look is specially desirable.

Write for Details!

Illustrated bulletins giving full details and data on Ingersoll Aluminum and Porcelain Enameled Roof Decks are now available. Write *today!* Learn all the facts. This information may be invaluable on your next job!

Ingersoll
ROOF DECK



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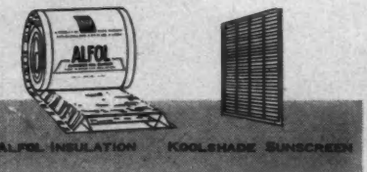


AE LITERATURE

(Continued from page 260)

Blanket Insulation. Kimsul "48" sheathing blanket is described and illustrated in a folder that includes application information for heating, electrical and plumbing installations. *Kimberly-Clark Corp., Neenah, Wis.*

Toplights. An 8-page brochure describes glass blocks pre-assembled into standard grids for installation on roofs and includes graphs and charts based on comparative lighting tests. *American 3 Way-Luxfer Prism Co., 431 Dearborn St., Chicago 5, Ill.*

Skylight. A general description is included in a 6-page catalog which gives budget, design and lighting data as well as utilization tables of *Laubert* skylights. *Laubert Lighting Inc., 205 East 43rd St., New York 17.*

Doors. Rolling steel sectional doors for residential, commercial and industrial buildings are described in a 4-page illustrated folder which includes framing details and specifications. *Roly-Door Div., Morrison Steel Products, Inc., 601 Amherst St., Buffalo 7, N. Y.*

Mahogany Furniture. Among the subjects covered in a 32-page, illustrated booklet on mahogany are how to determine quality and value in furniture, construction in furniture, how to detect substitutes and imitations and information on colors and finishes. *Mahogany Assoc., Inc., 666 N. Lake Shore Dr., Chicago 11, Ill.*

Welded Wire Fabric. A 44-page, illustrated catalog includes comprehensive design data and recommendations on applications of welded wire fabric in concrete as well as information on fireproofing structural steel, lightweight structural concrete, shrinkage and temperature reinforcement, and concrete slabs on ground. *Wire Reinforcement Institute, Dept. 50, 1049 Nat'l Press Bldg., Washington 4, D. C.*

Literature Requested

Natalio Firszt, architect, S.de Bustamante 210, Buenos Aires, Argentina.

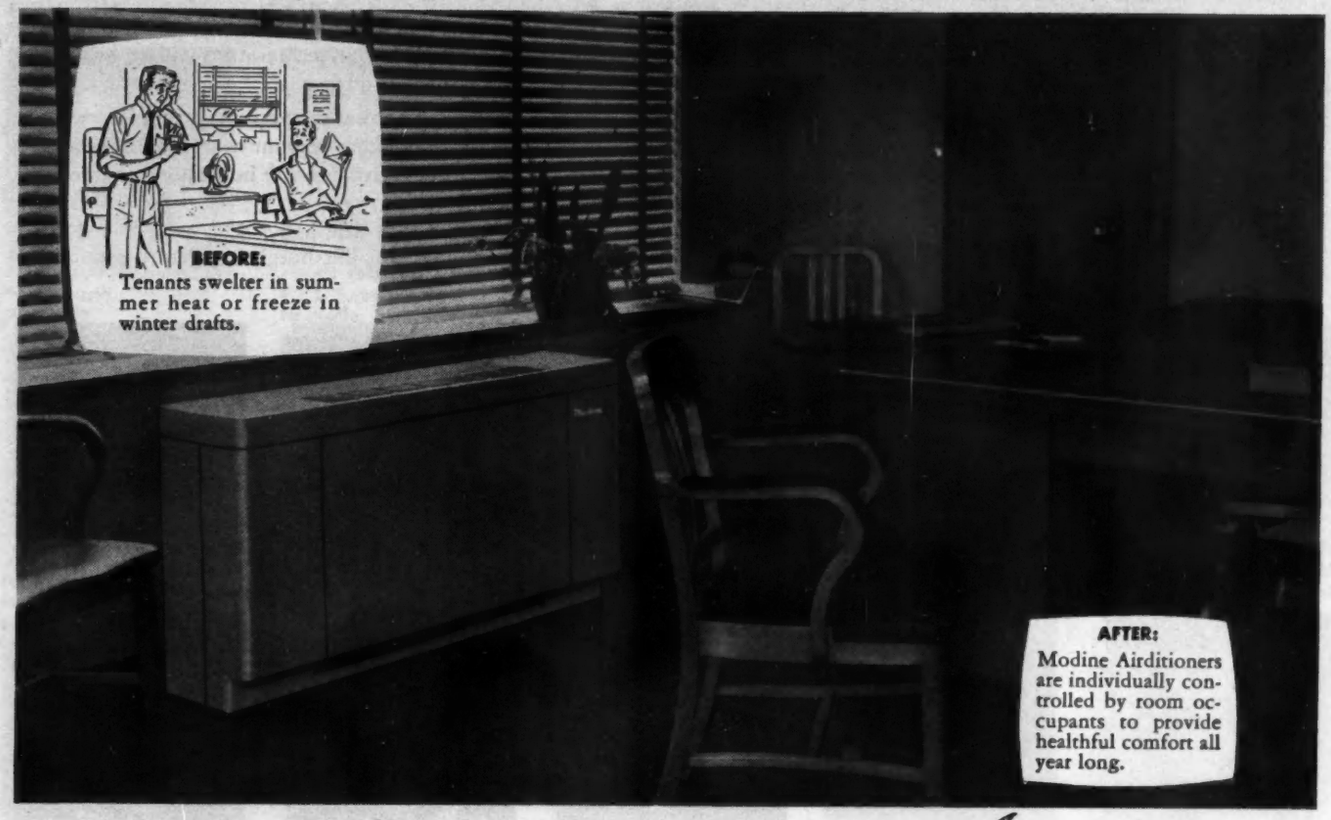
Cecilia Horovitz, architect, Picheuta 403, 6o.A, Buenos Aires, Argentina.

Kirk C. McFarland, Jr., engineer, 476 Park Ave., San Jose 10, Calif.

George Mikulskis, 195 Lucille Ave., Elmont, L. I., N. Y.

Roger Mark Singer, industrial designer, 520 Fifth Ave., New York 36, N. Y.

Air conditioning existing buildings may be easier than you think...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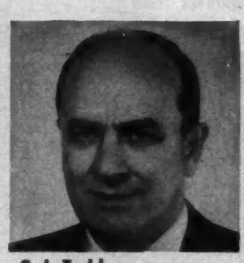
For any detailed information you may require, we suggest that you get in touch with your nearest *Pittsburgh* Architectural Representative. He will be on hand to offer every assistance.

Pittsburgh Plate Glass Company, Room 5331, 632 Fort Duquesne Boulevard, Pittsburgh 22, Pennsylvania.

T. E. Thorn,
Boston, Mass.

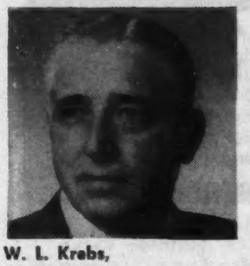
W. J. O'Malley,
Springfield, Mass.

R. H. Seelo,
New York City



C. I. Todd
New York City

W. F. Otto,
New York City



W. L. Krebs,
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W. H. Nimick, III,
Philadelphia, Pa.

H. C. Kellogg,
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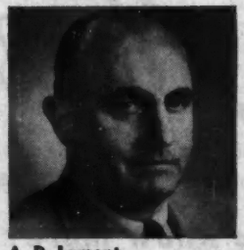
L. G. Wilhelm,
Pittsburgh, Pa.

H. D. Henzler,
Baltimore, Md.

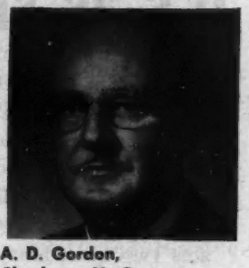
S. E. Reynolds,
Washington, D. C.



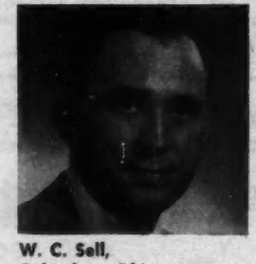
A. D. Lamont,
Washington, D. C.

G. H. Granish,
Akron, Ohio

E. R. Crick,
Cleveland, Ohio



A. D. Gordon,
Charlotte, N. C.



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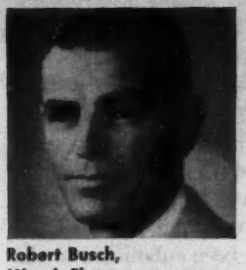
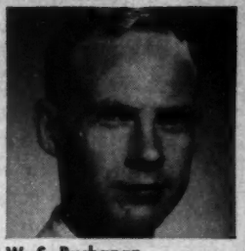


Robert Busch,
Miami, Fla.



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D. D. Kinney,
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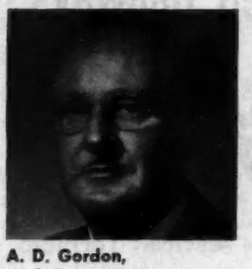
C. J. Robinson,
Des Moines, Iowa

Herbert E. Parsons, Jr.,
St. Louis, Mo.

Glen Jones,
Kansas City, Mo.

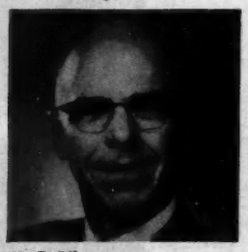


A. D. Gordon,
High Point, N. C.

I. Saye,
Tulsa, Okla.

G. M. Richardson,
Dallas, Texas

G. M. Richardson,
Fort Worth, Texas



M. E. Pike,
Wichita, Texas

Fred Harbordt,
Houston, Texas

P. G. Daniels,
Denver, Colo.

Ralph Lane,
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A.I.A. CONVENTION

(*Continued from page 12*)

advertising. The full text of the resolution as approved follows: "RESOLVED, That the use of the portrait of an architect in connection with advertising material published by factors of the building industry will be permitted, provided the manner of its use is dignified, neither exaggerated nor misleading, and will be of benefit to the profession or the Institute and that it is not accompanied by any statement of the architect which could be construed as an endorsement of a product or use, and provided the proposed use has been submitted to the Public Relations Committee and has been approved by it prior to its use."

In other convention actions, delegates approved bylaw amendments (1) providing for appointment by the regional

(*Continued on page 272*)

Top: 1955 Gold Medalist Willem Dudok with the incoming A.I.A. president, George Bain Cummings of Binghamton, and Mrs. Cummings. Next: RECORD editor-in-chief John Knox Shear; Nolan Barrick, architecture head at Texas Tech; Edwin Bateman Morris Jr., A.I.A. director of professional relations; Byron Bloomfield, new A.I.A. secretary for professional development; and Leonard Wolf, architecture head at Iowa State. Above: Francis D. Lethbridge, Washington, D. C.; Neil Connor, FHA director of architectural standards; Marion Manley, Miami; Mr. and Mrs. Harris Armstrong, Kirkwood, Mo.

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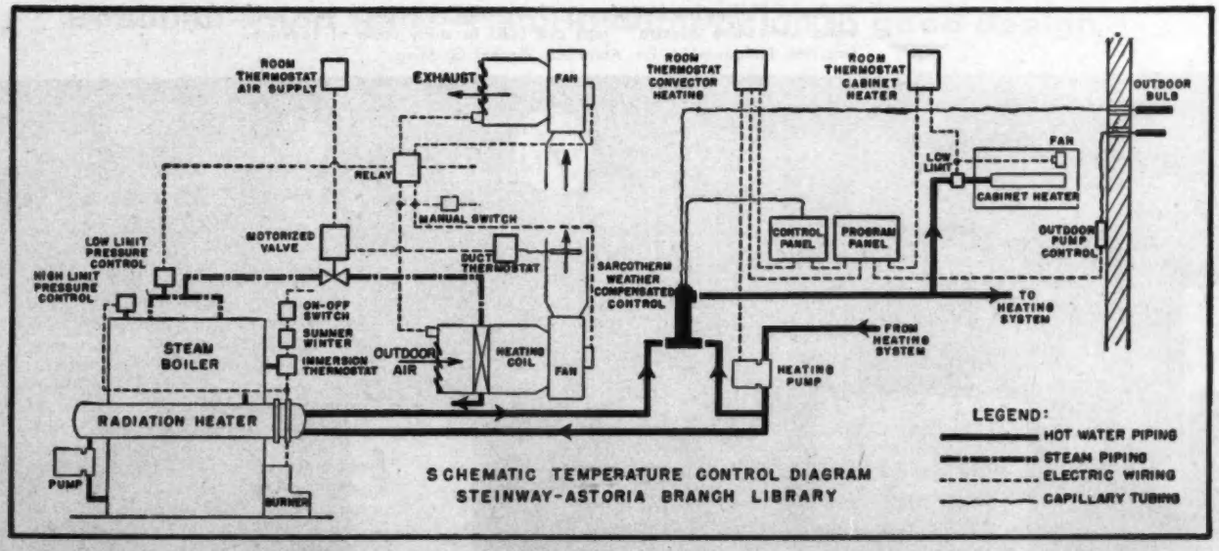
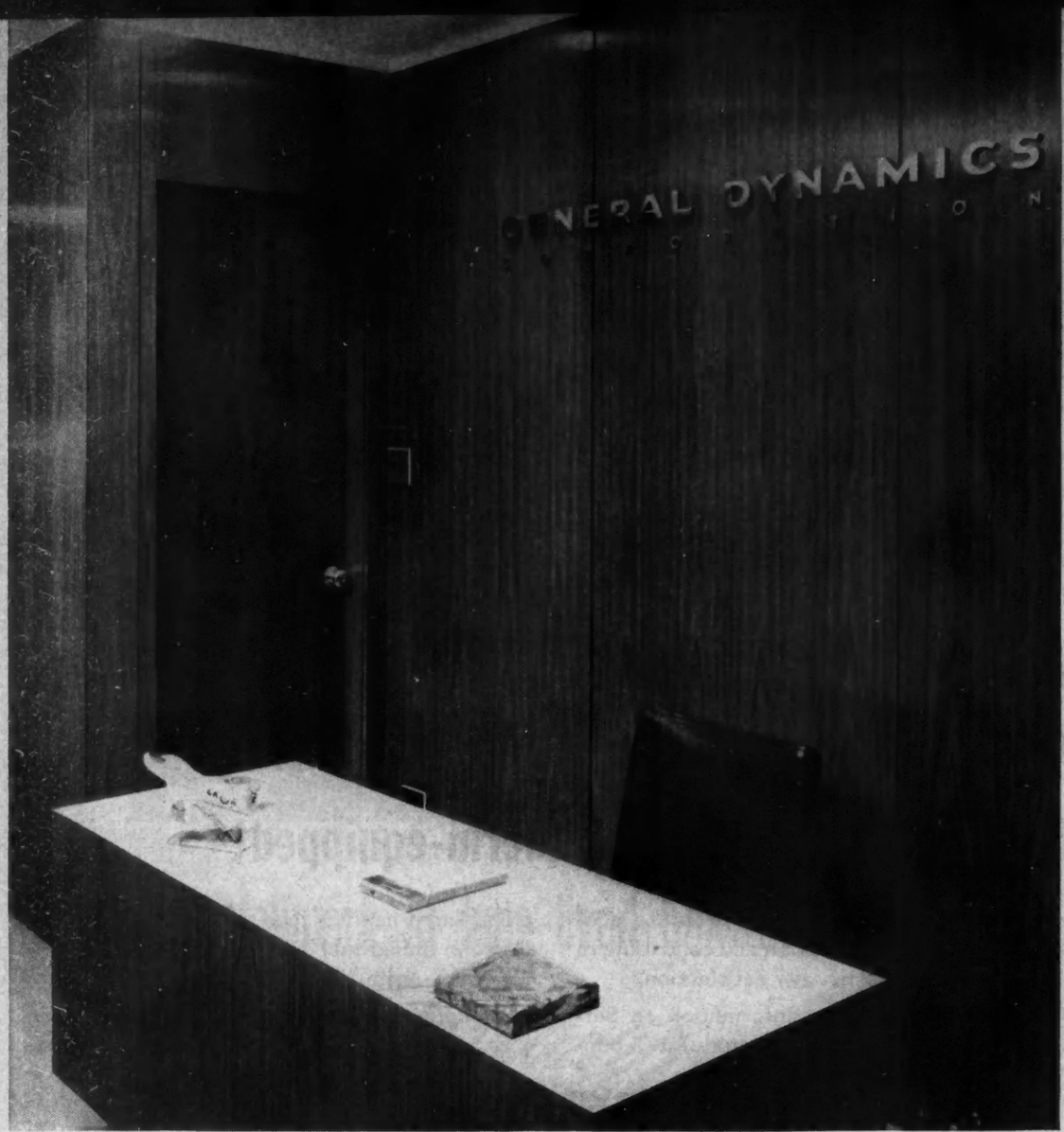


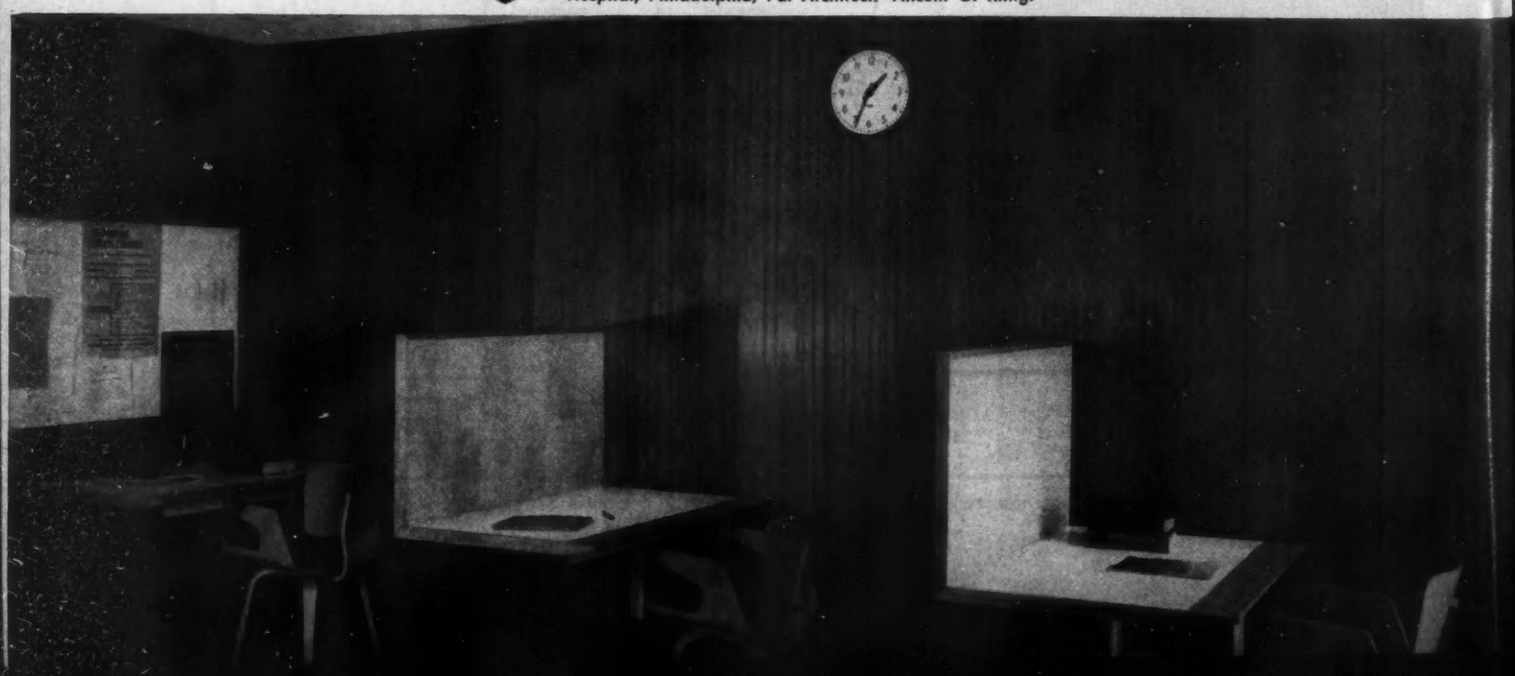
SCHEMATIC TEMPERATURE CONTROL DIAGRAM
STEINWAY-ASTORIA BRANCH LIBRARY

Architect: Adolph Goldberg, Brooklyn, N. Y. Engineers: V. L. Falotico & Associates, Brooklyn, N. Y. Heating Contractor: H. Sand & Co., New York, N. Y.



Reception room in offices of General Dynamics Corporation, New York, features Weldwood walnut walls, matching Weldwood Mineral Core Door, and Weldwood walnut desk. Interior planning by Ethel Pilson Warren and Joseph W. Rogers, Jr. Cabinetwork fabricated and installed by The Bartos Company.

Walls of Philippine Mahogany Plankweld and desks of birch Weldwood with white Micarta® tops are used in study room of Lankenau Hospital, Philadelphia, Pa. Architect: Vincent G. Kling.



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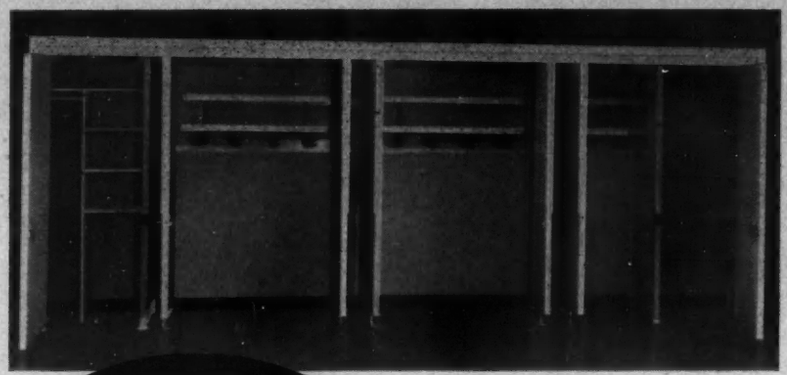

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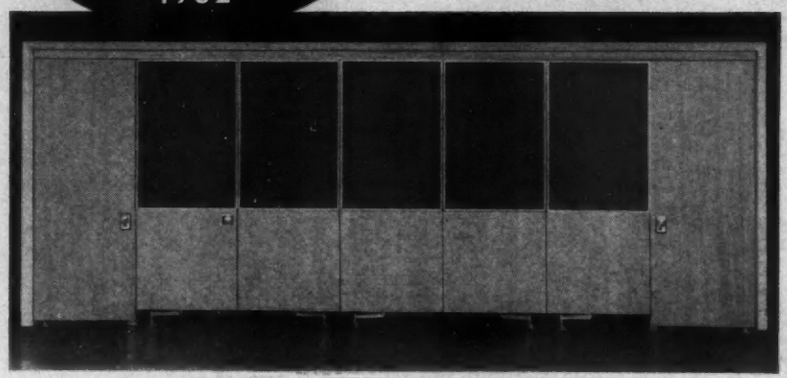

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THE RECORD REPORTS

A.I.A. CONVENTION

(*Continued from page 268*)

directors acting as a body of a nominating committee consisting of five corporate members other than members of the Board and permitting the nominating committee to provide additional nominations for offices or directorships for which nominations have already been presented; (2) providing for disciplinary action on charges of unprofessional conduct to be initiated by a regional Judiciary Committee rather than the chapter and for establishment of a national Judiciary Committee to be comprised of other than elected national officers or regional directors. Resolutions approved directed the Board to review the entire dues structure and put before the 1956 convention a proposal for revision; requested the Committee on Office Practice to submit a preliminary report on revision of the A.I.A. Standard Documents to the 1956 convention; called for study of the interests of younger architects and of ways of orienting A.I.A. activities to meet them; expressed opposition to the proposed

(*Continued on page 276*)

Top: Thomas D. Broad of Dallas; Mrs. Alexander Robinson III, Cleveland; Mr. Robinson; Mrs. Broad. Above: background is Minneapolis' new Prudential Life Insurance Building (Magney, Tusler & Setter, architects), where President's Reception was held; a group of Bostonians—John Stone, Thomas McDonough, William Stanley Parker, Isidor Richmond, George Kelly

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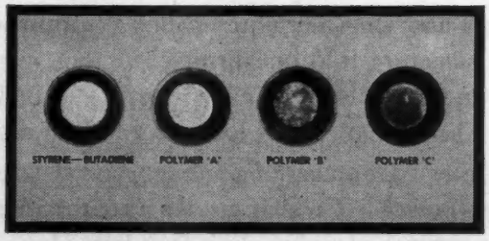
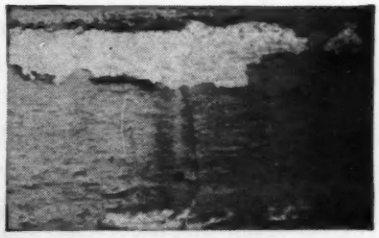
You'll benefit, too, when you specify easy-to-apply latex paints. They cover well over any masonry surface, dry quickly and speed cleanup. You'll get a beautiful job every time, in less time, and eliminate costly delays caused by unsatisfactory paint performance. For a list of leading paint manufacturers who make latex paints write to Plastics Sales Dept. PL 515I. THE DOW CHEMICAL COMPANY, Midland, Michigan, or to Dow Chemical of Canada, Limited, Toronto 2, Ont.

NO STAINING! Notice the absence of ground stains on this STYRENE BUTADIENE latex exterior masonry paint job. Dirt washes away with water and the surface won't water spot.



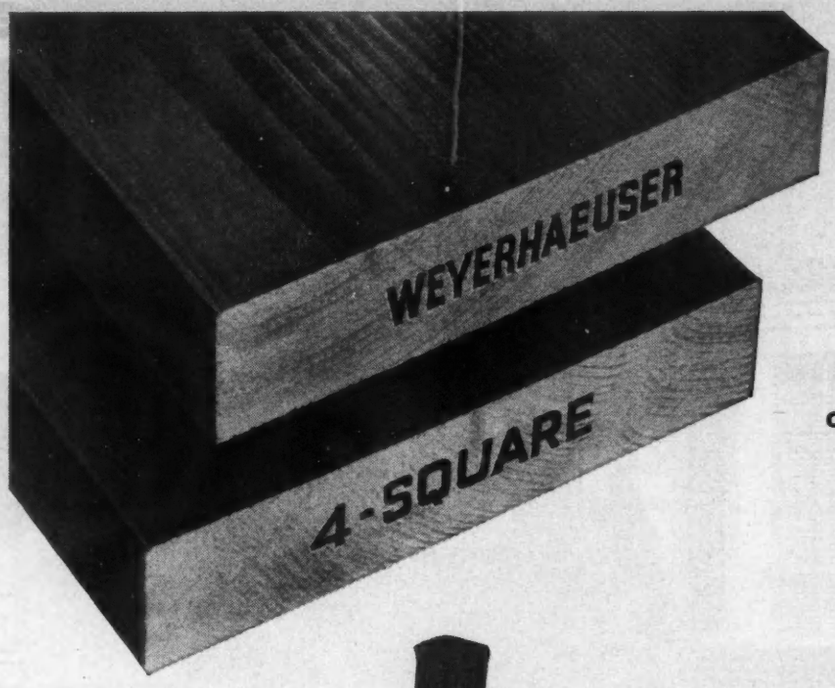
DOW LATEXES PROVE MILDEW RESISTANT! Dow Latex and three other commercial paint latexes were inoculated with four common paint mildew organisms. After a week at 95°F. only the Dow Latex completely resisted common forms of mildew growth.



NO SUCH FAILURE! Properly prepared surfaces protected with latex paint won't blister and peel like this. They chalk gradually, are ready for repainting with a minimum of preparation.

you can depend on DOW PLASTICS

DOW



This brand name on lumber also brings you . . .

Lumber

STRUCTURAL SOUNDNESS

Why is Lumber Sheathing Preferable?

One reason for the preferred position of wood sheathing is its great strength and long life. Often called "storm sheathing," wood binds the entire structure into one firm, rigid unit, which withstands enormous wind and snow loads. This strength also makes alterations easier and safer. The strength is not lost as a result of accidental wetting.

Other advantages of genuine wood sheathing include superior nail-holding power . . . which assures a solid base to which one can securely attach exterior covering. This firm base also permits the use of a variety of exterior coverings, such as vertical siding and shingles.

A Traditional Mark of Quality

Fine homes are sheathed with lumber—because architects recognize lumber as the ideal sheathing material for sidewalls, roofs, and subfloors.

Generations of dependable service have proved the value of this fine building material. Homes and other light construction built with lumber sheathing offer the owner or purchaser the best in terms of durability, strength, and rigidity—which means true structural economy.

Sheathing

S AND TRUE ECONOMY

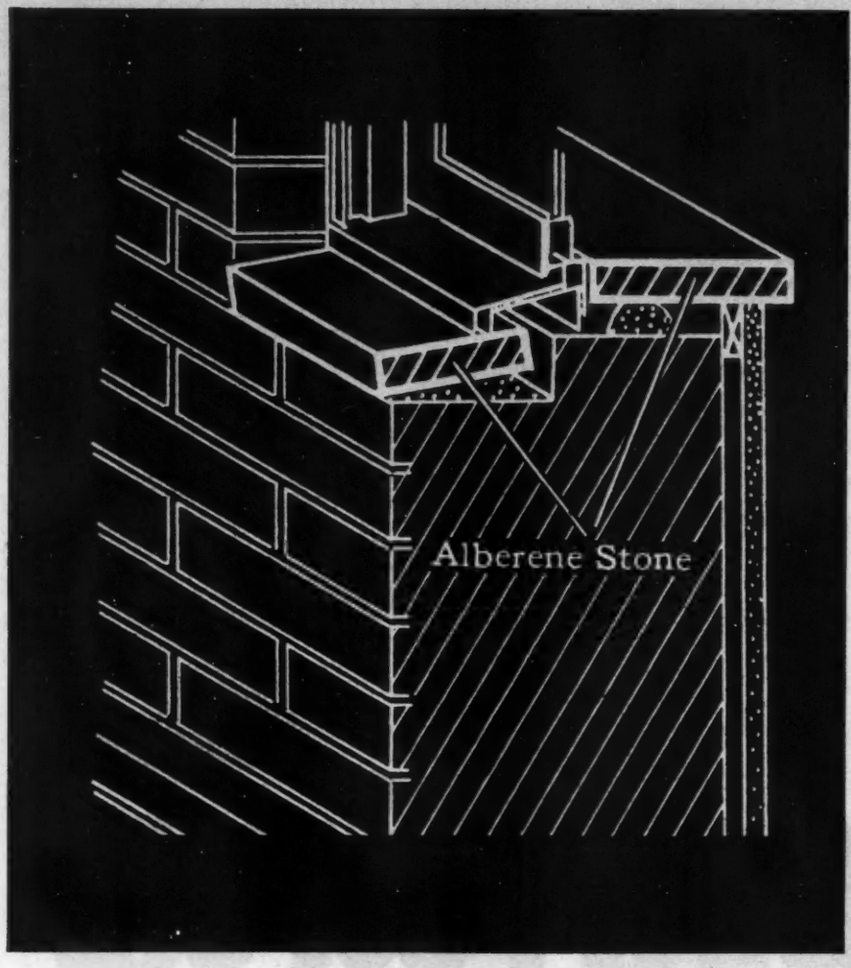
Available in a Wide Range of Widths, Species, Grades and Patterns

A broad selection of Weyerhaeuser 4-Square Lumber items is offered for use as wall and roof sheathing and subflooring. There are species, widths, and grades to serve most building requirements.

For greater structural soundness and for true final economy in light construction, specify Weyerhaeuser 4-Square Lumber sheathing. Your Weyerhaeuser 4-Square Lumber Dealer is ready to deliver a species and type suited to your needs.

Weyerhaeuser Sales Company

ST. PAUL 1, MINNESOTA



Let's talk "SILLS and STOOLS"

—that are both durable and attractive.

Alberene Stone—*the natural silicate stone*—is weatherproof. Its low absorbency prevents spalling and splitting in freezing temperatures. Its all-silicate mineral components resist chemical attack, staining and loss of surface polish. It requires no maintenance.

That's why Alberene Stone window stools have recently been shipped to many of the finest new hospitals in the country including: Providence Hospital and U. S. Soldiers' Home, Washington, D. C.; Baptist Memorial Hospital — University of Tennessee Physiology Building, Memphis, Tenn.; Coney Island Hospital, New York; and the Grady Hospital, Atlanta, Ga.

For information and technical assistance, address: Alberene Stone Corporation, 419 Fourth Avenue, New York 16, N. Y.

ALBERENE STONE

provides LOW ABSORBENCY protection

THE RECORD REPORTS

A.I.A. CONVENTION

(*Continued from page 272*)

alterations to the U. S. Capitol which call for destruction of the historic east façade of the central block and proposed offering the services of the A.I.A. to advise on more desirable ways of obtaining additional space.

Some They Rejected

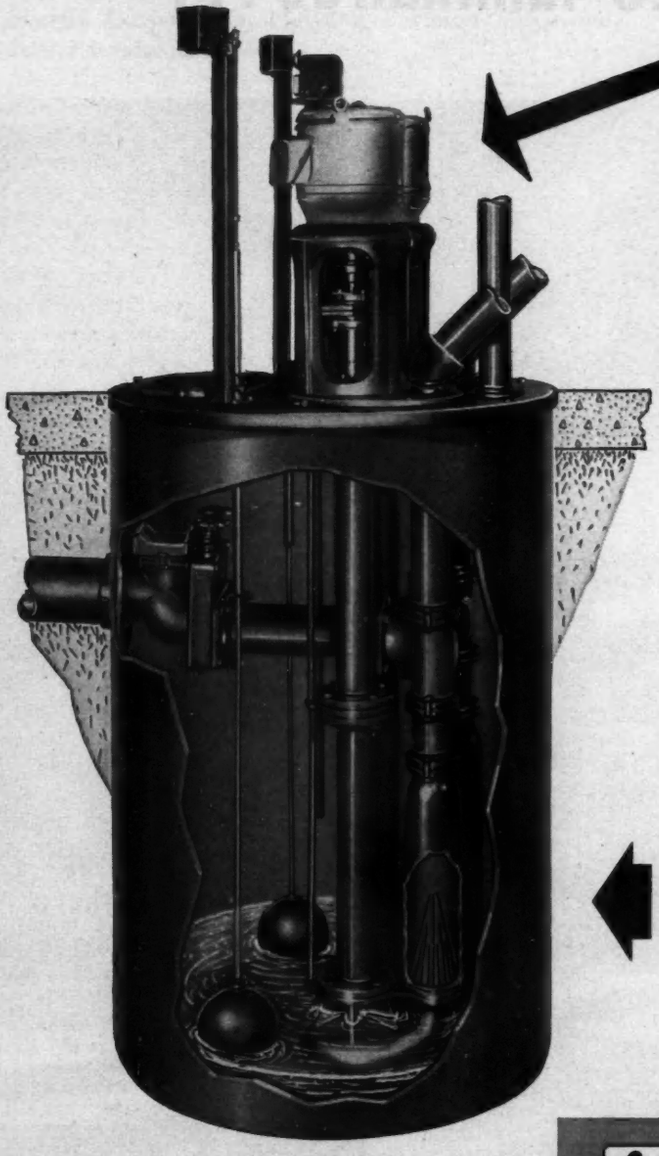
Rejected were proposals to limit the A.I.A. president's term to one year; to limit terms of regional directors to two years; to poll the entire membership on the question of election of officers and directors by letter-ballot instead of (as now) by delegate vote; to synchronize the terms of all chapter officers; and (after extended discussion) to make it official A.I.A. policy to press for the holding of competitions to select architects for public buildings. A bylaw amendment calling for a 20 per cent reduction in the number of member delegates to conventions was "tabled for further study by the Board."

(From top) 1. Mellen Greeley, Jacksonville; John Stetson and Maurice Holley, Palm Beach; Kenneth Jacobson, Delray Beach; Jack B. Zimmer; architecture head John Grand, University of Florida; Clinton Gamble, Fort Lauderdale, Florida Society president. 2. Middle Atlantic get-together—Francis Jencks, Baltimore; Paul Schell, Pittsburgh; Regional Director Marcellus Wright Jr.; Ted Engelhardt, Potomac Valley Chapter; Romolo Botelli Jr., Newark, N. J.; Ronald Senseman, Potomac Valley Chapter; Harry Maslow, Elizabeth, N. J.; Leon Chatelain Jr., Washington, D. C.; Charles Haviland, Charleston, W. Va.; Weston Blake, Wilmington; Edmond Dunlop, Philadelphia

(*More photos on page 280*)

Avoid pump clogging trouble....

with "FLUSH KLEEN"® SEWAGE EJECTORS



Type "F" submerged "Flush Kleen" sewage ejector

This is the only truly clog-proof sewage ejector. Only liquid is handled by the impeller. All other air or liquid ejectors have working parts in contact with coarse sewage material that causes clogging. In the "Flush Kleen" all coarse matter is strained out, then back-washed from the strainer into the higher level sewer. Of the more than 8000 "Flush Kleen" sewage ejectors used on ships, military installations, municipal lift stations, commercial and industrial buildings of all kinds, not one has ever clogged.

Protect your client — and your reputation. Guarantee owner satisfaction by specifying "Flush Kleen" sewage ejectors wherever sewage must be pumped.

OPERATING DETAILS

"Flush Kleen" sewage ejectors are usually installed in duplex units and operate alternately. While one pump operates, sewage flows into the wet basin through the idle pump. A strainer ahead of the pump impeller retains all coarse sewage matter. (see cutaway)

When the idle pump starts, the coarse sewage matter in the strainer chamber is flushed into the discharge pipe with liquid sewage.

A special check valve prevents discharges back into the inlet line.

Engineering data showing how to determine sewage ejector capacities for any type or size of building are now available. Write to Dept. A for your copy today.

fmc

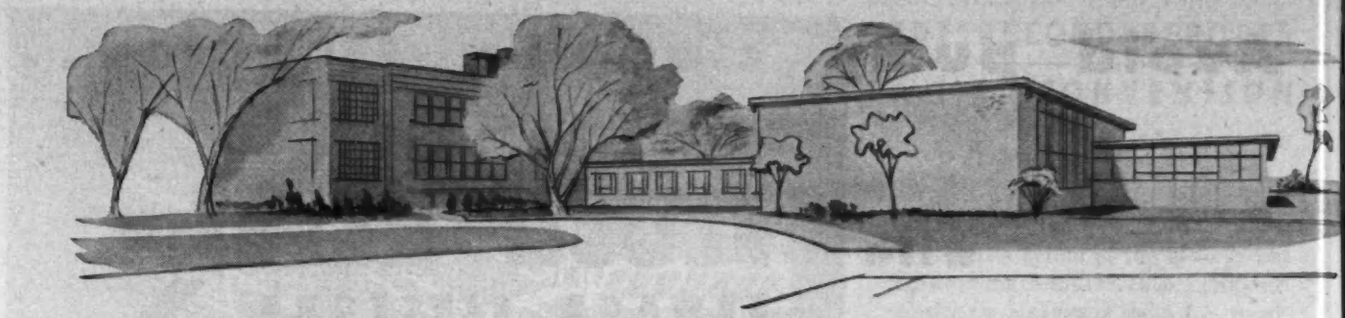
CHICAGO PUMP COMPANY

Subsidiary of Food Machinery and Chemical Corporation

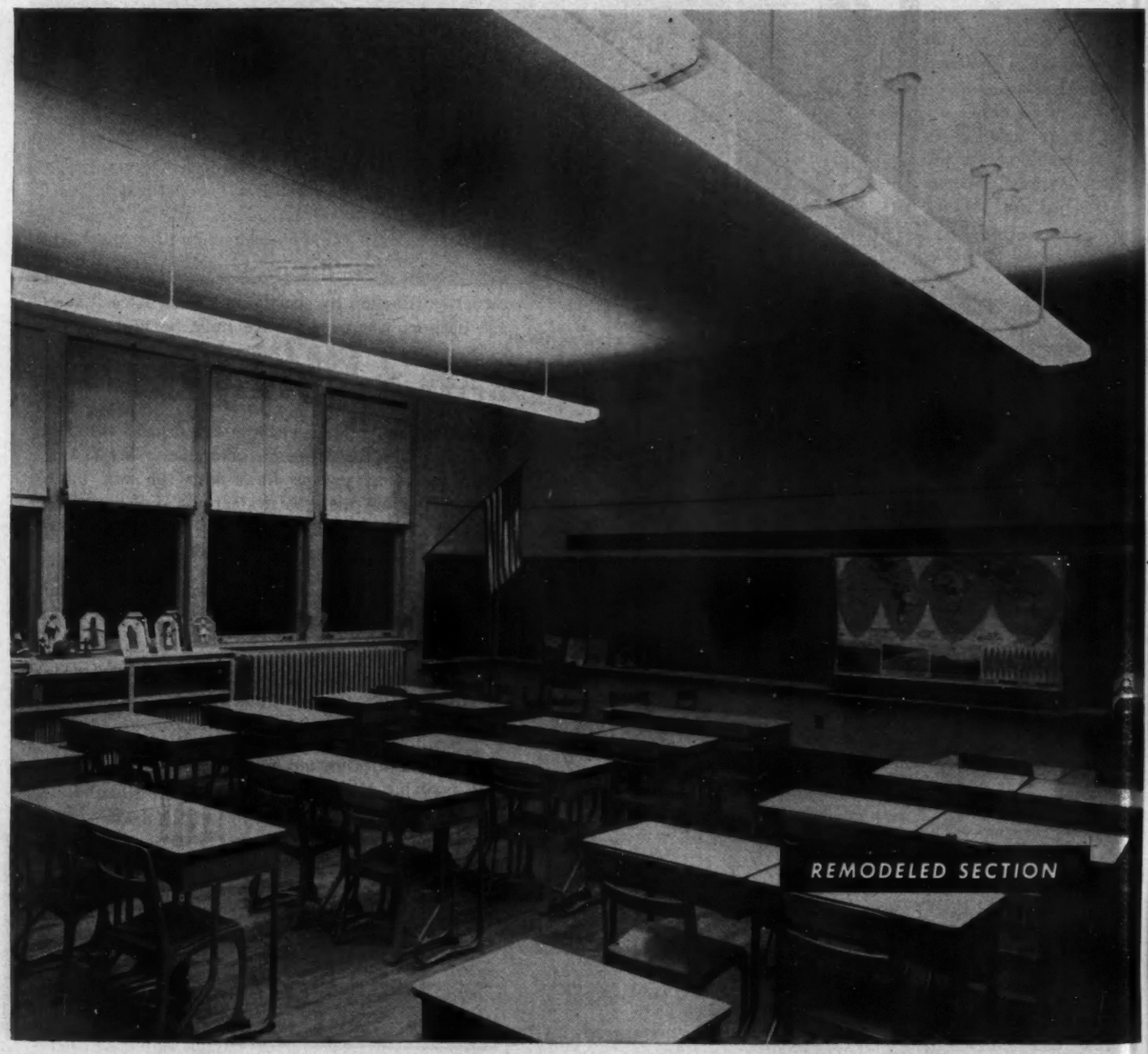
BUILDING PUMP DIVISION

422 DIVERSEY PARKWAY • CHICAGO 14, ILLINOIS

Condo-Vac ®, Sure Return ®, AVC, LVC, Fire, House & Circulating Pumps, Pneumatic & Tankless Water Systems, Flush Kleen ® Sewage Ejectors, Little Giant ® & Non-Clog Bilge Pumps, Pumps for every industrial use.



Elm Hill School remodels and expands using Westinghouse LC luminaires . . .

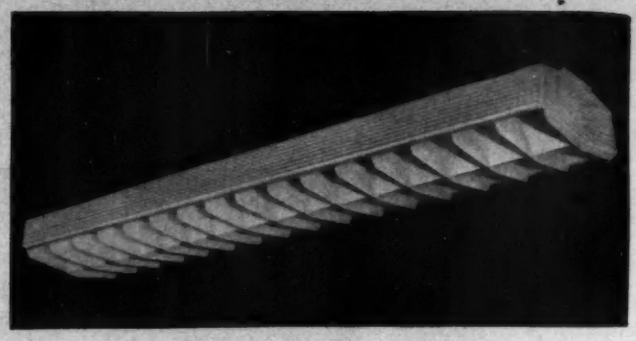


REMODELED SECTION

Elm Hill School officials recognized the need for modern lighting in their remodeling and expansion program. To answer this need—Westinghouse LC luminaires were selected as standard units because they enhance the fresh appearance of the new wing, and add modern styling to the existing classrooms. In addition, these new LC luminaires, with plastic side panels, provide comfortable glare-free illumination so important to advanced teaching techniques.

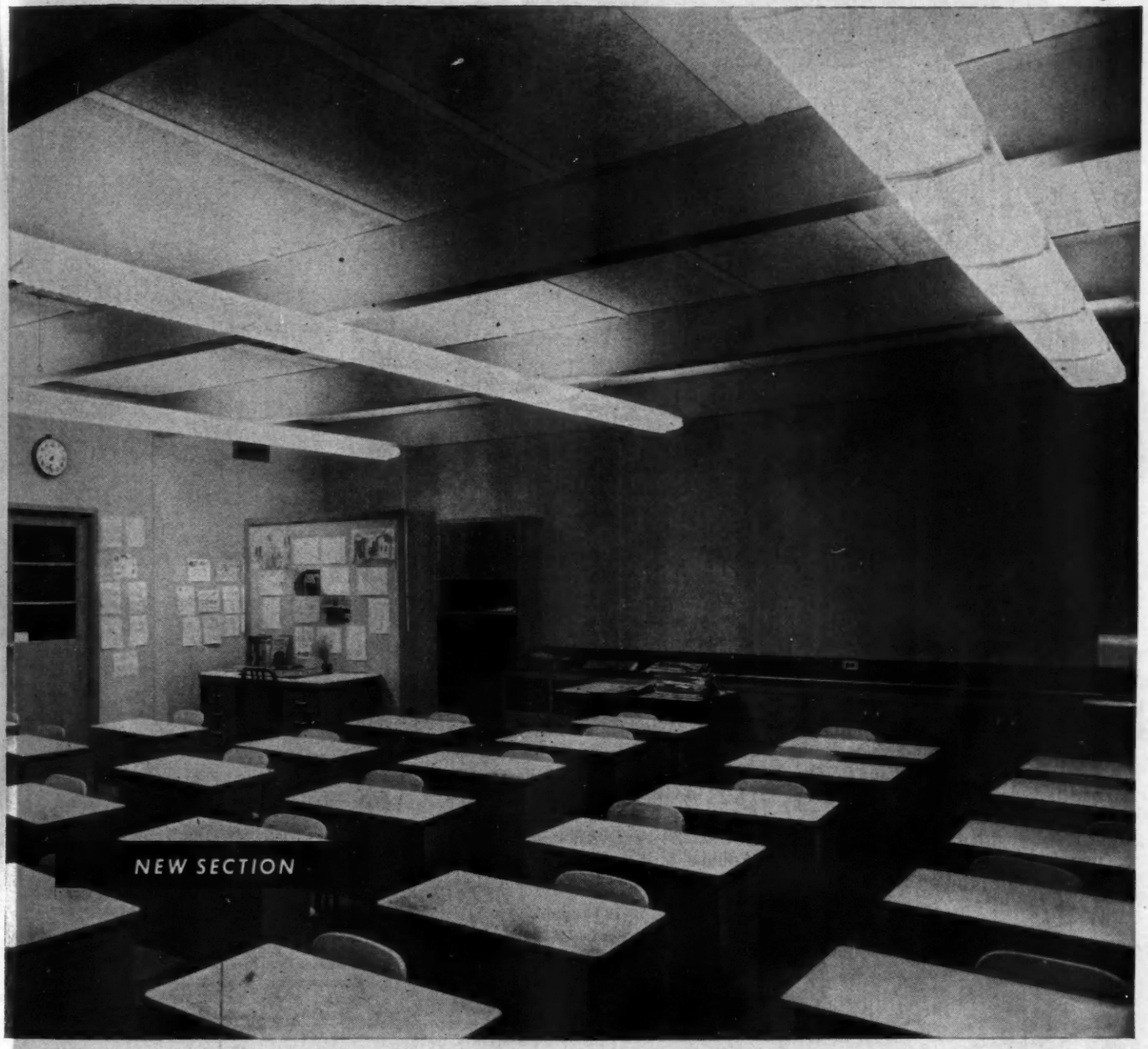
Once again Westinghouse LC luminaires prove their flexibility in new classrooms and old. If you are planning a modernization or expansion program, write for the Westinghouse ABC plan for school lighting.

When you make your selection, let your architect know your preference for Westinghouse school lighting fixtures. More information? See your local Westinghouse distributor or write Westinghouse Electric Corporation, Lighting Division, Edgewater Park, Cleveland, Ohio. J-04377



YOU CAN BE SURE...IF IT'S

Westinghouse



Announcing the new Printmaster 810

The Printmaster is the cumulative result of twenty years of research, engineering, and user experience. It offers big production, superlative performance, wide versatility, easy and economical operation—all for the first time combined in a medium price machine.

For any company which requires volume prints of varied types and sizes, the Printmaster 810 can show marked savings in printing time and print costs.

The 810 prints and develops in one continuous operation, at speeds up to 40 feet a minute, on roll or cut stock as wide as 42 inches. It's literally packed with new features.

Jet nozzle feed, a new evaporation principle; steady vapor pressure that assures fast uniform development.

Rotating brush feed that smooths out the original, even if it has been tightly rolled for months.

Positive pickoff with new plastic fingers that easily and smoothly lift prints off the printing cylinder.

Tracing receiving tray especially designed for use with roll stock.

New print pickoff that lifts off the finished print with compressed air.

New mercury lamp prints more efficiently, and uses less current.

Twin blowers that dissipate heat and vapor, make the operation of the 810 cool and easy.

Electronic controls that automatically synchronize vapor circulation to the machine speed; with separate manual controls for certain types of printing.

Front stacker that handles prints as large as 42 by 24 inches. Optional rear delivery for prints as large as 36 by 42 inches.

Ask your nearest Ozalid distributor to show you what the new Printmaster 810 can do for you. Or write 304 Ozaway, Johnson City, N. Y. In Canada, the Hughes Owens Company, Ltd., Montreal.

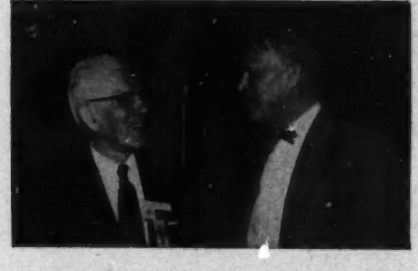
OZALID—A Division of General Aniline & Film Corporation . . . *From Research to Reality*

OZALID

THE RECORD REPORTS

A.I.A. CONVENTION

(Continued from page 276)

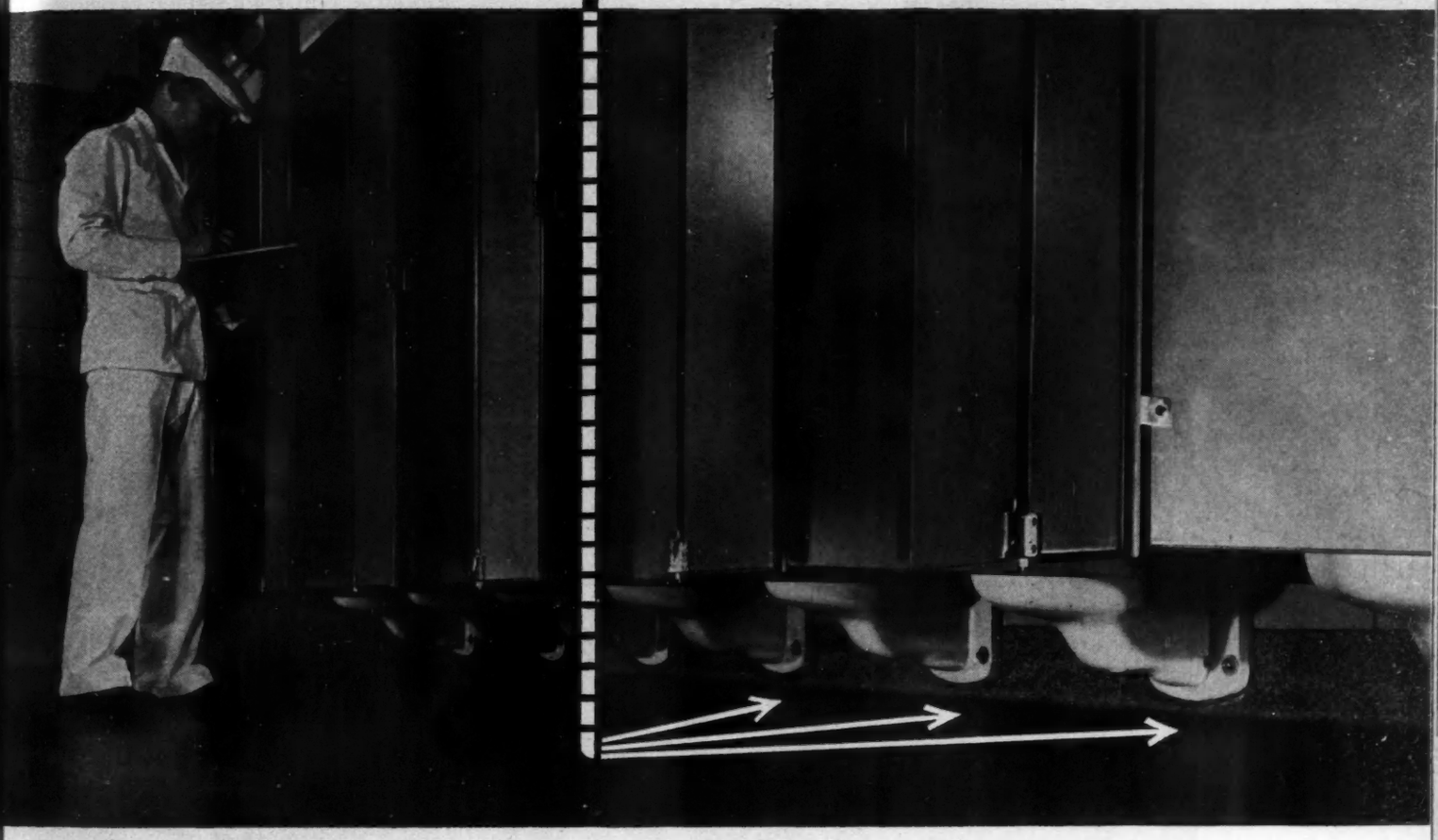


(From top) 1. Harlan McClure, new architecture head at Clemson College, with Mrs. McClure and Harold D. Hauf, architecture chairman at R.P.I. 2. Mr. and Mrs. George Vernon Russell, Los Angeles; Walter Stromquist, Palto Alto. 3. Mr. and Mrs. Roger Allen, Grand Rapids; Mellen Greeley, Jacksonville. 4. Leigh Hunt of Milwaukee and Harold Sleeper of New York. 5. John C. Knight, William H. Deitrick and N. C. State's Henry Kamphoefner, all of Raleigh, N. C.

(More photos on page 284)

● MODERN NOTE IN REST ROOM PLANNING

Planned sanitation pays off here...



...in lower cleaning costs, in complete 'round-the-clock sanitation, in modern appearance.

These advantages are made possible *only* with off-the-floor plumbing fixtures . . . the *modern* way to assure rest room sanitation.

By installing behind-the-wall ZURN SYSTEMS for the support of American-Standard off-the-floor plumbing fixtures, you achieve complete hospital-like sanitation forever. This keeps rest room floors free of fixtures and supports, speeds cleaning and permits the highest degree of sanitation and cleanliness to be attained and maintained.

The time for decision on plumbing fixtures for any really modern building comes at the drawing-board stage. Planning a Zurn-and-American-Standard installation simplifies the entire plumbing system . . . saves you time and space and lowers building costs.

Architects, contractors and building owners everywhere are recognizing the advantages of off-the-floor plumbing. For more information, write for free copies of "You Can Build it and Maintain it for Less a New Way," and "The American-Standard Better Rest Room Guide."

For complete data on the various ZURN SYSTEM fittings and carriers available for supporting American-Standard wall-type fixtures, specify our cross reference index, Form 54-A—111-2.

AMERICAN-Standard off-the-floor plumbing fixtures installed with the ZURN **system®** give you these important benefits:—

√ insured sanitation

√ simplified maintenance

√ modern appearance

ZURN / American-Standard

J.A. ZURN MFG. CO.

PLUMBING DIVISION

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★ ★ ★ ★ ★ ★ ★

PLUMBING DIVISION OF

AMERICAN RADIATOR AND STANDARD SANITARY CORPORATION

PITTSBURGH 22, PENNSYLVANIA

Good idea from 'I
Insulite Roof I

HOUSE & GARDEN'S 1955 House of Ideas, Birmingham, Mich.
Designer-builder: Richard B. Pollman, Richard B. Pollman Building Co., Detroit.
Architects: Irving Palmquist, A.I.A., & Clifford Wright, A.I.A., Detroit.

n "House of Ideas"...
f Deck combines 3 jobs in 1

Insulite Roof Deck goes on fast and combines three jobs in a single operation. It's roof deck, roof insulation and finished ceiling all in one. It reduces costs $80 to $300 per thousand square feet of surface.

Yet this money-saving product is just as at home in this luxurious HOUSE & GARDEN'S 1955 House of Ideas as it is in an economy 3-bedroom rambler.

In any home, Roof Deck's white pre-finished underside adds a definite touch of quality. The big, two-foot wide units contribute to that free, open look and complement the design aims of exposed beam ceiling construction. Here's how Roof Deck can help you build better for less on your exposed beam ceiling jobs . . .

1 It's a roof deck. Cuts application time as much as 45%. Only one material to handle. New Insulite Roof Deck eliminates need for separate roof boards, insulation, lath and plaster and ceiling finishing. Roof Deck can save 12 man-hours per 1,000 sq. ft. of surface compared with 2″x6″ D&M roof sheathing.

2 It's insulation with vapor barrier. No need for other insulation. Two-inch Roof Deck, for example, is comparable to 2″ wood deck plus 1″ fiberboard insulation and meets heat loss requirements for roof and ceiling construction. Exclusive built-in vapor barrier protects against condensation within the unit.

3 It's a finished ceiling. The underside of Roof Deck is factory-finished in white. Lay Roof Deck over pre-finished beams—and ceiling is done. No need to plaster, paint, stain or wax. Available in 2′x8′ units, 1½″, 2″ or 3″ thick with or without exclusive vapor barrier.

Build better and save with

INSULITE

Made of hardy Northern wood

MANDO

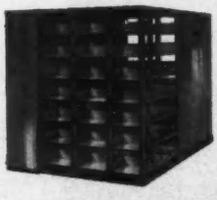
INSULITE DIVISION, Minnesota and Ontario Paper Company, Minneapolis 2, Minnesota

Send for complete information now. Actual on-the-job pictures and construction details show how to use new Insulite Roof Deck to build better for less. Write Insulite, Minneapolis 2, Minn.

INSULITE IS A REGISTERED TRADE MARK

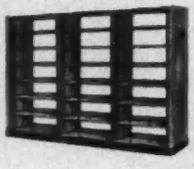
Give them more books in the same space...with COMPO

When a library remodeling assignment calls for 1) greater book capacity, 2) more spacious and inviting book area, and 3) no additional floor space—Hamilton Compo sliding-shelf stacks are the only answer. They actually open up the book area, while accommodating twice the books in the same shelf space.

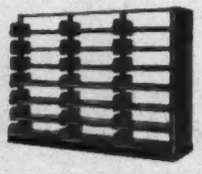


Compo stacks also get a new library off to the right start, by anticipating future circulation needs. They're handsome stacks too, all-steel, completely modern and functional. And you can specify that they have lock-equipped compartments for special books and papers.

CONTINUOUS UPRIGHT



HAMILTON-STANDARD



Also available are popular Hamilton-Standard and Continuous Upright steel stacks—equally good-looking, durable and efficient, with easily adjustable shelves.

Complete details and specifications are well worth your having on tap. Write for them today, without obligation.

Hamilton LIBRARY EQUIPMENT

HAMILTON MANUFACTURING COMPANY • Two Rivers, Wisconsin

THE RECORD REPORTS

A.I.A. CONVENTION

(Continued from page 280)

(From top) 1. William Balch, Los Angeles; Donald Setter and Stowell Leach, Minneapolis; John Brenner. 2. Dean Thomas Locraft, Catholic University; Mrs. George Cline Smith, New York; Mrs. Locraft; Alexander Cochran, Baltimore. 3. Mrs. Allan Meinecke, St. Paul; Mrs. Knute Henning, Fargo, N. D.; N. D. State architecture head Knute Henning; Mr. Meinecke; John Belair, Minneapolis; (standing) Mrs. Belair and Mrs. Naomi Watson of Minneapolis. 4. Hari van Hoefen and Robert Elkington, St. Louis; H. Griffith Edwards, Atlanta. 5. James Hunter, Boulder, Colo.; Harold Bush-Brown, Georgia Tech architecture head; and Mrs. Bush-Brown

"UNPROTECTED" STEEL DECK

Withstands Raging Fire For 1 Hour-49 Minutes IN HISTORY-MAKING FIRE TEST!

HERE'S THE AMAZING SYSTEM THAT HOLDS NEW PROMISE FOR LOW COST ROOF CONSTRUCTION AND GREATER FIRE SAFETY!

Monolithic Insulation Sustains Galvanized Metal Deck In Grueling Test

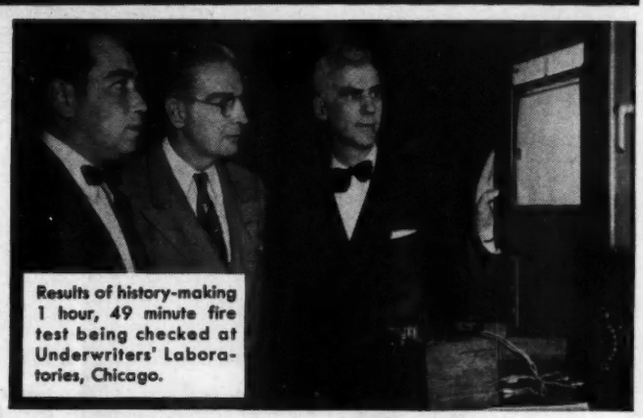
You know that unprotected rolled structural steel has a fire resistance of 15-20 minutes at temperatures of 1000°F.-1300°F. Above is the Zonolite reinforced deck that survived 1800°F. temperatures *seven times longer!*

Take a good look at the New Look in Roof Construction!

The recently conducted Underwriters' Laboratories fire test in Chicago puts the spotlight on a new, revolutionary kind of "unprotected" low-cost steel deck which is 7 times safer.

Metal Deck with 3" of Reinforced Zonolite Vermiculite Concrete on Top:

1. **Withstood fire and heat transfer for 1 hour and 49 minutes, while roof deck deflection remained well within design limits.**
2. **Withstood hose stream test following the fire.**
3. **Withstood ACI 24-hour double-loading test.**



Results of history-making 1 hour, 49 minute fire test being checked at Underwriters' Laboratories, Chicago.

ZONOLITE® VERMICULITE CONCRETE

ZONOLITE COMPANY • 135 S. LaSalle St., Chicago 3, Illinois

MAIL COUPON TODAY!

Investigate this remarkable roof system that combines insulation, maximum fire safety, and low cost. Send now for complete data on this new roof test, plus full information on Zonolite "Systems of Lightweight Construction."

Zonolite Company, Dept. AR-85
135 S. LaSalle St.
Chicago 3, Illinois

Please send me details of recent fire test, plus new booklet "Systems of Lightweight Construction."

Name.....

Firm.....

Address.....

City.....Zone.....State.....

☐ Architect ☐ Engineer ☐ .....

How well is Architectural Record serving

33 awards

Equally significant are 70 out of 77 readership studies SPONSORED BY BUILDING PRODUCT MANUFACTURERS AND ADVERTISING AGENCIES in which architects and engineers have voted Architectural Record their preferred architectural magazine.

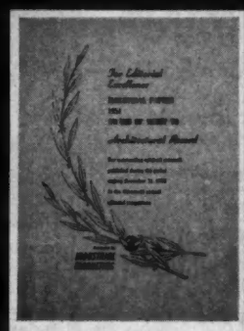
And Architectural Record's top circulation among architects, consulting engineers and staff architects and engineers in commerce and industry also speaks for the quality of Architectural Record's editorial service. (Eighty-five per cent of all architect-designed building, nonresidential and residential, small and large, is in the hands of the Record's architect and engineer subscribers.)

Finally, there is the testimony of building product manufacturers and advertising agencies who know that editorial values are the source of all magazine advertising values—*and schedule their advertising accordingly.*

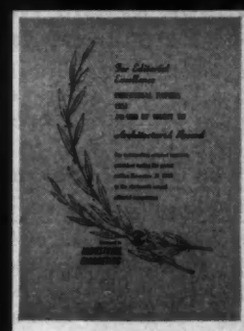
Year after year—and again in 1955—more building product advertisers are placing more pages of advertising in Architectural Record than in any other architectural magazine.

First Award 1951—best graphic presentation—"Architecture in Hawaii," October and November 1950 issues.

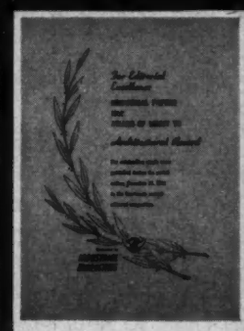
First Award 1951—best single issue—October 1950 issue featuring "Mental Hospitals and Schools."



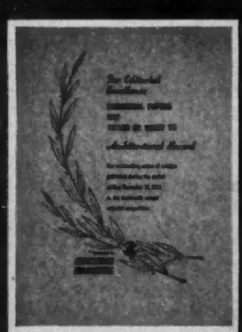
Award of Merit 1951 — outstanding original research—"Design Requirements of Motels," March 1950 issue.



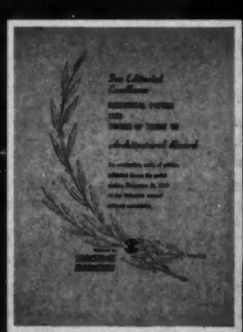
Award of Merit 1951 — outstanding original research—"Next Year's Boom Will Be Different," November 1950.



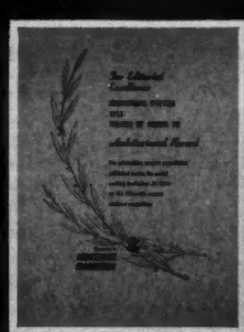
Award of Merit 1952 — outstanding issue, June 1951 issue featuring "Schools and School Practice."



Award of Merit 1952 — outstanding series of articles—"Philosophy of Architecture," (1951).



Award of Merit 1953 — outstanding series of articles—"Philosophy of Architecture," (1952).



Award of Merit 1953 — outstanding graphic presentation — "Building in the Tropics," August 1952.

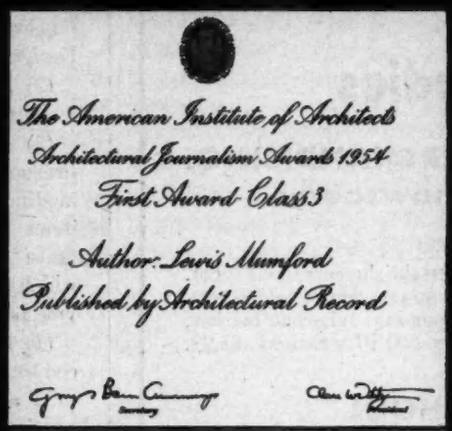
Award of Merit 1953 — outstanding single article—"Building in the Tropics," August 1952 issue.

Award of Merit 1953 — outstanding single article—"United Nations Headquarters," July 1952 issue.

your Architect and Engineer prospects?...

for editorial excellence

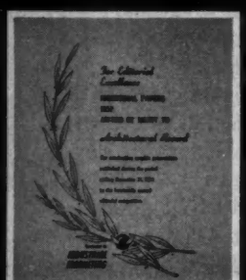
including three of the four top awards available to architectural magazines in the first two editorial competitions conducted by The American Institute of Architects—tell part of the story...



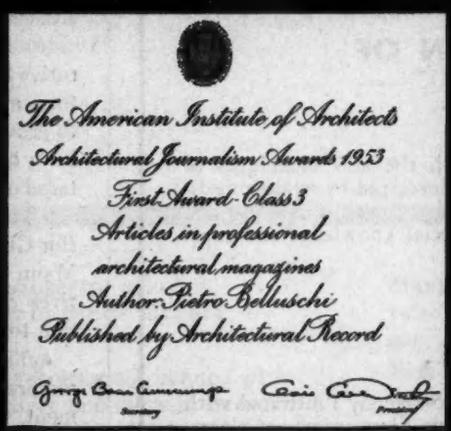
First Award 1955—"Best article in a professional architectural magazine"—American Institute of Architects' Architectural Journalism Competition.

The American Institute of Architects
Architectural Journalism Awards 1953
First Award-Class 6
Photographs of architectural subjects published in magazines
Photographer: Ezra Stoller
Published by Architectural Record

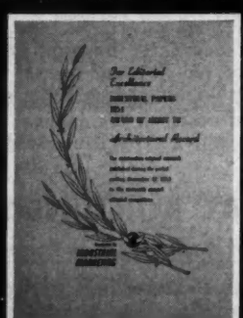
First Award 1954—"Best photograph of an architectural subject published in a magazine"—American Institute of Architects' Competition.



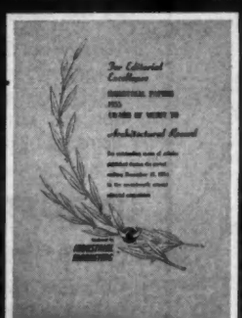
Award of Merit 1952—outstanding graphic presentation—"Vacation House in Oregon," July 1951 issue.


The American Institute of Architects
Architectural Journalism Awards 1953
First Award-Class 3
Articles in professional architectural magazines
Author: Pietro Belluschi
Published by Architectural Record

First Award 1954—"Best article in a professional architectural magazine"—American Institute of Architects' Competition.



Award of Merit 1954—outstanding original research—"Guns and Butter and Babies," November 1953.



Award of Merit 1955—outstanding series of articles—"Thin Shells"—July, September, November, 1954.

First Award 1954—best graphic presentation—"Hotel Copan, Sao Paulo, Brazil," October 1953 issue.

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Architectural Record

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WASHINGTON REPORT

AIR FORCE DEFINITIVES

(Continued from page 24)

affecting the design of the facility. The old definitive was, in most cases, a single sheet which focused mainly on area and functional layout requirements.

Two-Part Program

The architectural firms selected for the work of revision were Daniel Mann Johnson & Mendenhall of Los Angeles, for personnel type facilities, and Giffels & Vallet, Inc., L. Rossetti, of Detroit, for technical type facilities. Monitorship of the program is the responsibility of the Architectural Branch of the Engineering Division in the office of the Air Force Assistant Chief of Staff for Installations, Major General Lee B. Washbourne.

The program entailed (a) development of a new concept and format for the definitives; and (b) research on 70 types to collect and apply the necessary information in new-style data sheets. How thorough a review the Air Force was after is indicated by the following outline of contract requirements:

(1) Study and analyze the present research methods, to determine the desired function to be served by the Definitive Design and drawing format.

(2) Evaluate the procedures, and recommend changes.

(3) Analyze and evaluate existing presentation methods. Recommend modifications to include delineation of items and conditions determined as finite utilities requirements, variables which may be discretionary, and to provide basic design guidance.

(4) Devise detailed methods and procedure for future A-E contractors to obtain and assemble research material required for definitive design for the Air Force, with determination of best methods and format for presentation.

(5) Develop a standard drawing and materials presentation format for issuance to field agencies, to include equipment lists, design data analysis and incremental design features.

(6) Develop a basis for design in narrative form, presenting fundamental features and requirements in such a way as to provide a planning basis for expandability of the facility with background material on design depicted in the definitive.

All this in addition to completion of 40 (for Giffels & Vallet) and 32 (for Daniel Mann Johnson & Mendenhall) definitives on specific "items" for distribution to field agencies.

Achievement of all these objectives required extensive research into equipment, with manufacturers, Air Material Command, Wright Air Development Center and other agencies. Specific operational requirements had to be worked against information thus obtained before a functional layout could be developed. And an important factor affecting the whole process was the desire of the Air Force to provide leeway for expression of the initiative and ingenuity of the architect designing the facility and stimulus rather than impediment to his design capabilities.

DODGE Building Studies

DESIGN FOR MODERN MERCHANDISING: Stores, Shopping Centers, Showrooms

***by the editors of* ARCHITECTURAL RECORD**

A detailed study of the physical design of selling establishments of all types. Included are stores for soft and hard goods, food stores, department stores, wholesale showrooms, and that offspring of a booming, suburban market, the shopping center. 254 pages, 8¾ x 11⅝, over 600 illustrations, $8.95.

PLANNING ELEMENTARY SCHOOL BUILDINGS

by Engelhardt, Engelhardt and Leggett

A comprehensive study of design, equipment and facilities for elementary schools. The authors relate the fundamentals of daily teacher-pupil activity to the architect's design problems. Over 200 illustrations plus extensive charts of activities, equipment and facilities. 268 pages, 8¾ x 11⅛, $12.50.

DESIGN AND CONSTRUCTION OF GENERAL HOSPITALS

by the U. S. Public Health Service

This vital book correlates hospital design with the new techniques of diagnosis, surgery, physical and mental therapy developed by modern medicine. Architects, engineers, physicians, surgeons, nurses, dieticians and hospital administrators all contributed their special knowledge and experience. 214 pages, 8¾ x 11⅝, Illustrated, $12.00.

INDUSTRIAL BUILDINGS

***by the editors of* ARCHITECTURAL RECORD**

Contains 116 case studies of industrial projects completely illustrated with over 1500 photographs, plans, charts and diagrams. Here are power plants, research centers, manufacturing buildings and storage structures. Hundreds of specialized industrial building design problems are covered by some of the world's leading specialists. 546 pages, 8¾ x 11½, $9.00.

Any Dodge Book may be ordered on a 10-day approval and returned without obligation if not found satisfactory

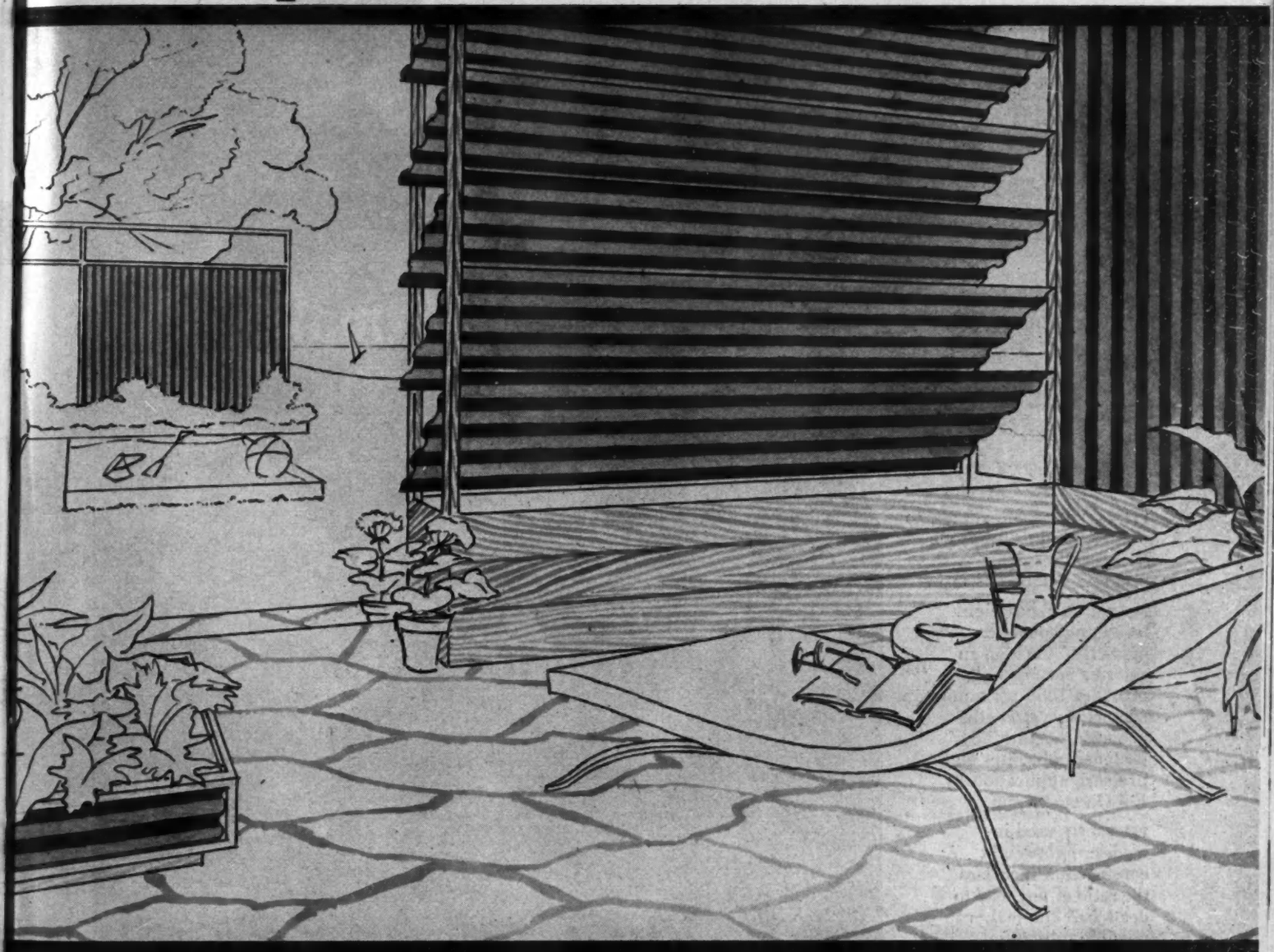
DODGE BOOKS, F. W. DODGE CORP.

119 West 40 Street, New York 18, N. Y.

920

Preview by Monsanto

Reinforced plastic panels are used to give a terrace privacy and protection



Never before has a building material matched both the versatility and durability of panels that are molded of reinforced plastic.

These colorful panels, molded of fibrous glass bonded with polyester resins, are being used more and more in new construction and modernizing. Present applications include roof and sidewall insets, partitions, awnings, patios, carports, windbreaks and planting boxes.

Ready-to-install panels are available in pastel and deep colors. Panels are translucent. They admit light but maintain privacy. No surface finishing is required.

The material is light in weight, dentproof, rotproof. It can be sawed, nailed and drilled. It weathers rain and snow, sun and temperature change.

Many building supply houses now carry stocks of reinforced plastic panels. They are available flat or corrugated, in a wide variety of sizes and colors.

Basic ingredients for the polyester resins which are used in molding reinforced plastic panels are made by Monsanto Chemical Company. These include Monsanto *styrene monomer* and *phthalic* and *maleic anhydride.*

The Department of Architecture *of the Massachusetts Institute of Technology has recently published a report titled "Plastics in Housing." This study was made possible by a grant-in-aid from the Market Development Department of Monsanto Chemical Company, Plastics Division. Copies of the report are available at $2.00 each. Address Monsanto Chemical Company, Plastics Division, Dept. AR-8, Springfield 2, Massachusetts.*

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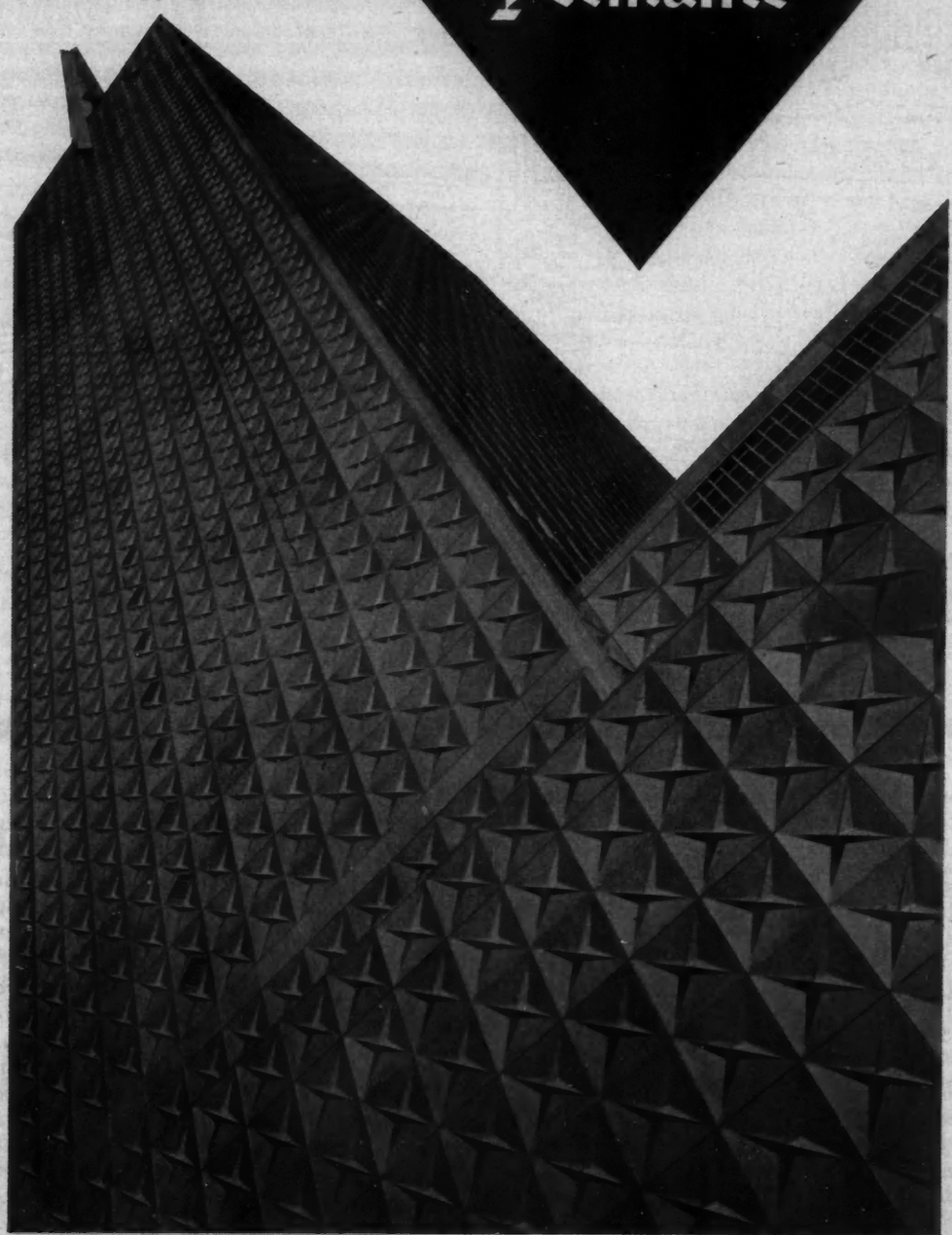

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gill and harrell, dallas

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THE RECORD REPORTS:

(*Continued from page 288*)

ON THE CALENDAR

August

4–6 The 12th Annual Midsummer Conference, Michigan Society of Architects — Grand Hotel, Mackinac Island, Mich.

15–26 Noise Reduction: a special summer program under the direction of Dr. Leo L. Beranek, associate professor of communications — Massachusetts Institute of Technology, Cambridge 39, Mass.

22–23 Electronics and Automatic Production; a national symposium jointly sponsored by Stanford Research Institute and National Industrial Conference Board — San Francisco

22ff City and Regional Planning; a special summer program offering an intensive review of both administrative and technical aspects; until Sept. 2 — Massachusetts Institute of Technology, Cambridge 39, Mass.

September

6–16 Machine Tool Show, sponsored by National Machine Tool Builders Association — International Amphitheater, Chicago

6–17 Production Engineering Show, an exhibit of automatic mechanisms and techniques for manufacturing and processing industries sponsored by Clapp & Poliak — Navy Pier, Chicago

9–11 Fourth Annual Conference, Northwest District, American Institute of Architects — Many Glaciers Hotel, Glacier National Park

10–18 National Home Week; annual observance sponsored by the National Association of Home Build-

12–16 Annual technical conference, Illuminating Engineering Society — Hotel Statler, Cleveland

14–16 The 17th Annual Shop Practice Forum, Porcelain Enamel Institute — Deshler-Hilton Hotel and Ohio State University, Columbus, Ohio

19–22 Annual convention, American Hospital Association — Traymore Hotel, Atlantic City

25–29 Annual planning conference, American Society of Planning Officials — Sheraton Mount Royal Hotel, Montreal

26–30 Annual meeting, Atomic Industrial Forum, and First Trade Fair of the Atomic Industry — Sheraton-Park Hotel, Washington, D. C.

27ff Congress of Correction; 85th annual convention of the American Correctional Association; until Oct. 1 — Hotel Fort Des Moines, Des Moines, Iowa

27ff The 37th National Recreation Congress, sponsored by the National Recreation Association; until Oct. 1 — Denver

29ff Fourth annual meeting, Standards Engineers Society; until Oct. 1 — Hotel Statler, Hartford, Conn. Details from: Arnold B. White, % Veeder-Root Inc., Hartford

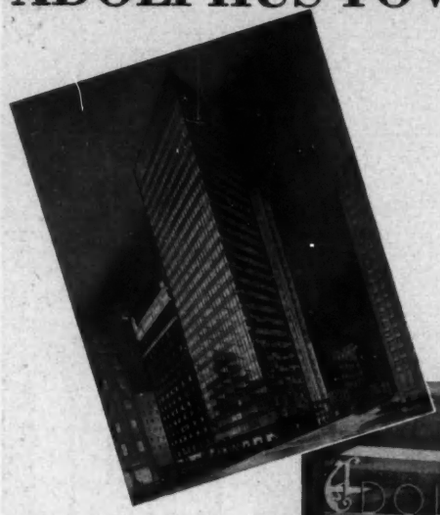
29ff Annual conference, United States

(*Continued on page 296*)

ADOLPHUS TOWER BUILDING

DALLAS, TEXAS

ARCHITECT
Wyatt C. Hedrick



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This handsome new hotel beautifies the corner of Wilshire and Santa Monica Boulevards in Beverly Hills, California. Its luxurious accommodations beckon to discriminating guests, of which it can accept 450.

The striking exterior symbolizes the modern architectural principles employed throughout the building. One out-of-the-ordinary feature is the steel roof decking, fabricated from sparkling sheets of 18-gage Bethcon continuously galvanized steel.

In the continuous galvanizing process, Bethcon's coating bonds so tightly that it can take severe forming without flaking. Even when the sheet is doubled back on itself the coating holds firm.

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Any city would be proud of a beautiful hotel like The Beverly Hilton, designed by Welton Becket, F.A.I.A., and Associates, Los Angeles, Architects and Engineers. It offers ultra-modern comfort to 450 guests in Beverly Hills.

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See "Meet the Press" on NBC-TV, sponsored on alternate Sundays by Johns-Manville

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THE RECORD REPORTS:

(*Continued from page 292*)

Civil Defense Council; until Oct. 1 — Hotel Statler, Boston, Mass.

October

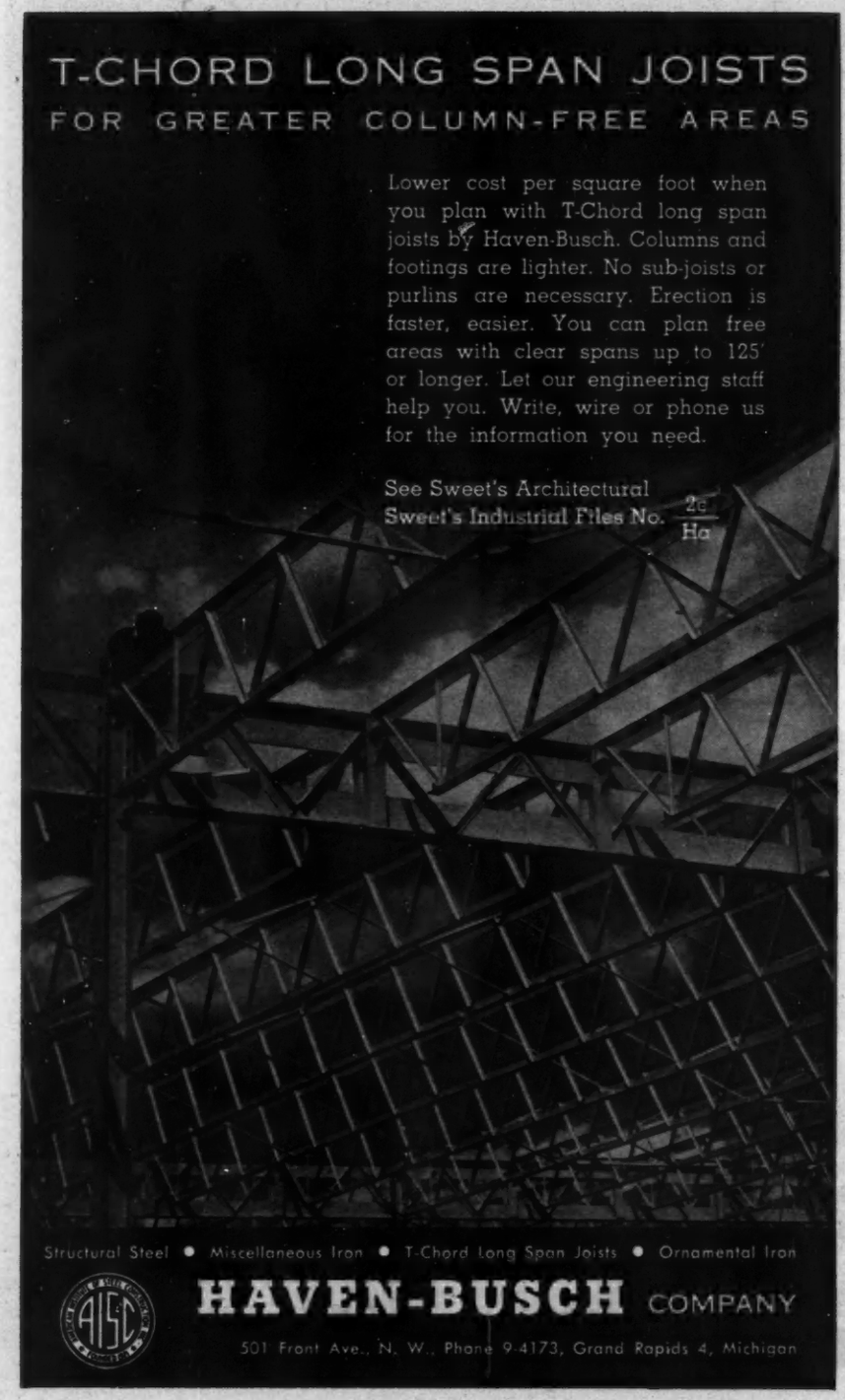
Annual convention, California Council of Architects — Santa Barbara, Cal.

6–8 Sierra Nevada Regional Conference, American Institute of Architects — Santa Barbara, Cal.

6–8 The 11th annual meeting and design conference, Society of Industrial Designers — Hotel Woodner, Washington, D. C.

6–8 Regional Conference of the Gulf States District, American Institute of Architects — Roosevelt Hotel, New Orleans

6–8 Annual convention, Structural Engineers of California — Yosemite National Park, Cal.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12–15 Tenth Annual Conference, Central States District, American Institute of Architects — Hotel Jefferson, St. Louis

13–15 Annual convention, American Federation of Arts — Des Moines Art Center, Des Moines, Iowa

13–15 New York Regional Conference, American Institute of Architects — Albany

13–15 Annual convention, New York State Association of Architects — Sheridan Ten Eyck Hotel, Albany

17–20 The 22nd annual conference, National Association of Housing and Redevelopment Officials — Statler Hotel, Cleveland

17–21 The 43rd National Safety Congress and Exposition — Conrad Hilton, Morrison and LaSalle Hotels, Chicago

24–26 Sixth National Conference on Standards, to be held under the joint sponsorship of the American Standards Association and the National Bureau of Standards — Sheraton-Park Hotel, Washington, D. C.

24–26 The 37th annual meeting of the American Standards Association — Sheraton-Park Hotel, Washington, D. C.

24–28 Convention of the American Society of Civil Engineers — Hotel Statler, New York City

26–28 The 24th Annual Meeting, Porcelain Enamel Institute, The Greenbrier, White Sulphur Springs, W. Va.

31ff First National Electrical Exposition, sponsored by the National Electrical Contractors Association in connection with its 54th anniversary convention; until Nov. 2 — Waldorf-Astoria Hotel, New York City

OFFICE NOTES

Offices Opened

• A. O. Budina, F.A.I.A., and Horace G. Freeman, A.I.A., have established a firm to be known as Budina and Freeman, with offices at Richmond Federal Building, 728 E. Main St., Richmond, Va.

• Jean Fenton Finkel and Warren Edward Finkel have announced the establishment of their offices for the practice

(*Continued on page 300*)

LIMESTONE TOWNSHIP HIGH SCHOOL, Bartonville, Illinois
Contractor: C. IBER & SONS, INC., Peoria, Illinois
Architect: HEWITT & BASTIAN, Peoria, Illinois
Concrete Units: IRIONS CONCRETE BLOCK CO., Chillicothe, Illinois

Lehigh Mortar Cement was used for all masonry—concrete block, brick and glass block. Note exposed concrete masonry walls in the music room shown below.

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C. Iber & Sons, Inc., contractor for the Limestone School, has used Lehigh Mortar Cement for several years—always to the complete satisfaction of everyone.

Satisfaction on the part of the contractor and the masons is expressed in this comment by Mr. Robert Iber, "By using Lehigh Mortar Cement, we were sure of an *ease in preparation and placement;* further, its workability and consistent uniformity aided in obtaining good workmanship and completing the masonry in time scheduled."

And on an earlier job, Mr. Iber explained what Lehigh Mortar Cement means to the architect and the owner; "We were sure we had weather-tight walls . . . interior block walls received no finish whatsoever and our firm, the architect and the public were very well pleased with the *clean appearance* of the unfinished surface."

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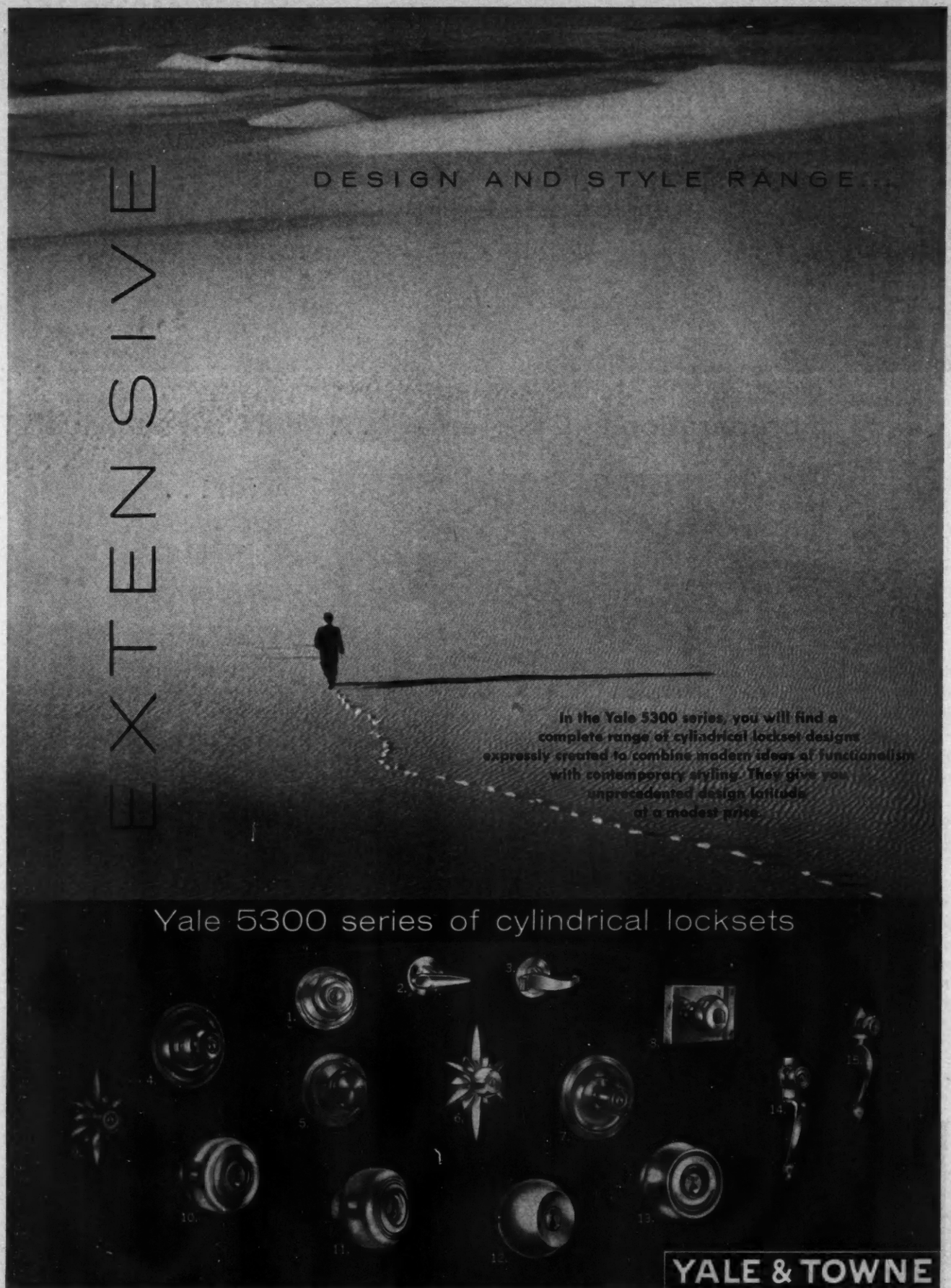
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DESIGN AND STYLE RANGE...
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Eight new escutcheons that combine with four new knobs... two new entrance handles... two new lever handles: 1. Troy with Norfolk escutcheon. 2. Deauville lever handle. 3. Guilford lever handle. 4. Troy with Madison escutcheon. 5. Litchfield with Savoy escutcheon. 6. Classic with Dallas escutcheon. 7. Nassau with Newport escutcheon. 8. Litchfield with Williamsburg escutcheon. 9. Nassau with Constellation escutcheon. 10. Litchfield knob. 11. Troy knob. 12. Classic knob. 13. Nassau knob. 14. Arlington entrance handle. 15. Westbrook entrance handle. Send for FREE full-color catalog. THE YALE & TOWNE MFG. CO., LOCK & HARDWARE DIV., STAMFORD, CONN. YALE, REG. U. S. PAT. OFF.

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This modernization is saving Motor Products time, labor, and money—better than $54,000 per year. Now the entire operation is clean and efficient. Production of economical steam is faster, simpler, more reliable and well within the bounds of smoke and dust regulations.

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If you're planning to modernize your plant or build a new one—or if you are just interested in cutting fuel costs—find out how coal, burned the modern way, compares to other fuels. Why not talk to a consulting engineer or your nearest coal distributor? Their advice may save you thousands of dollars each year.

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For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

NATIONAL COAL ASSOCIATION
Southern Building, Washington 5, D.C.

THE RECORD REPORTS:

(*Continued from page 296*)

of architecture at 800 Broadway, Lorain, Ohio.

• Leonard J. Klarich, Architect, has recently opened offices at 125 W. Fifth Ave., Gary, Ind.

• John E. Meyer, Consulting Structural Engineer, has announced the opening of offices at 688 Sexton Building, Minneapolis, Minn.

• M. O. Roache Jr. and R. W. Mercer Jr. have formed a partnership for the practice of consulting engineering. The firm, which will be known as Roache and Mercer, has offices at 1508 Belleville St., Richmond 21, Va.

• Lee Stegner, Architect, and William C. Hendrickson, Engineer, have formed a partnership to be known as Stegner, Hendrickson, Architects and Engineers; offices are at 119 "A" St., Brainerd, Minn.

• Charles A. Woehrl, Architect, has announced the opening of an office in collaboration with Franklin D. Mabbett at 119 E. Washington Ave., Madison 3, Wis.

Firm Changes

• Norris Sparks has been admitted as a partner into the firm of Morris Smith, to be known as Smith & Sparks, Architects. Offices are in the Rector Building, Little Rock, Ark.

• Watterson & Watson, Architects, is a new partnership composed of Joseph Watterson, A.I.A., and Walter L. Watson, A.I.A. The firm is located at 231 Mineola Blvd., Mineola, N. Y.

• Weaver, Stowers & Hiegel, Architects, is the name of the firm formerly known as Weaver & Stowers; Leo J. Hiegel is the new partner. New offices are located at 806 W. Second, Little Rock, Ark.

New Addresses

Charles A. Baylon & Associates, Architects-Designers-Planners, 912 Elliott Ave. West, Seattle 99, Wash.

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Norman C. Nagle, Architect, 5522 Wayzata Blvd., Minneapolis, Minn.

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Steinbaugh & Associates, Architects, 1035 Third National Bank, Nashville 3, Tenn.

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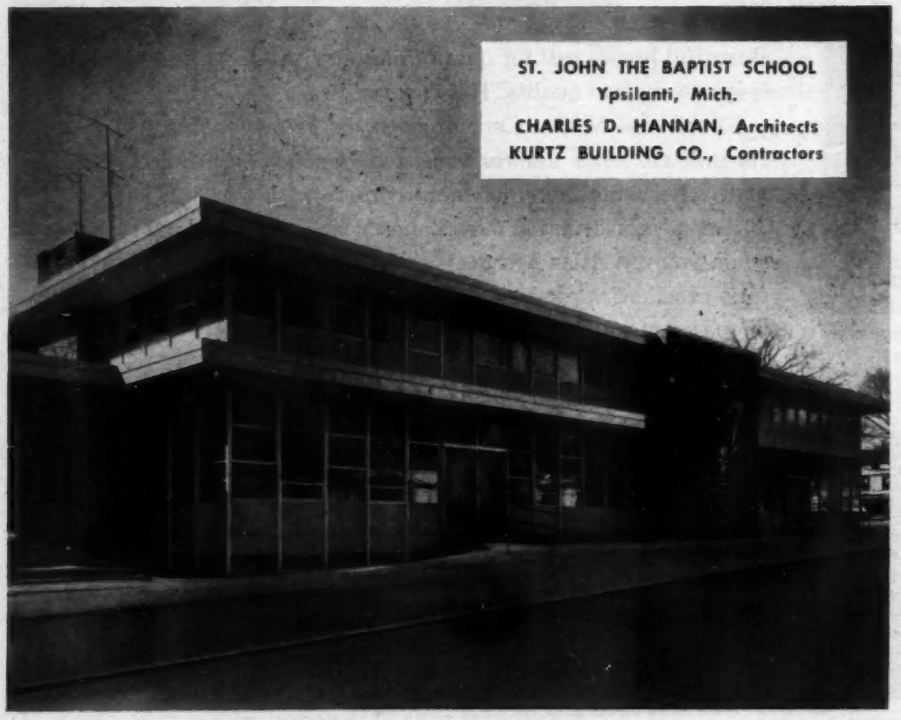

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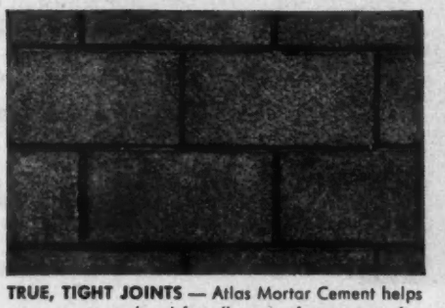

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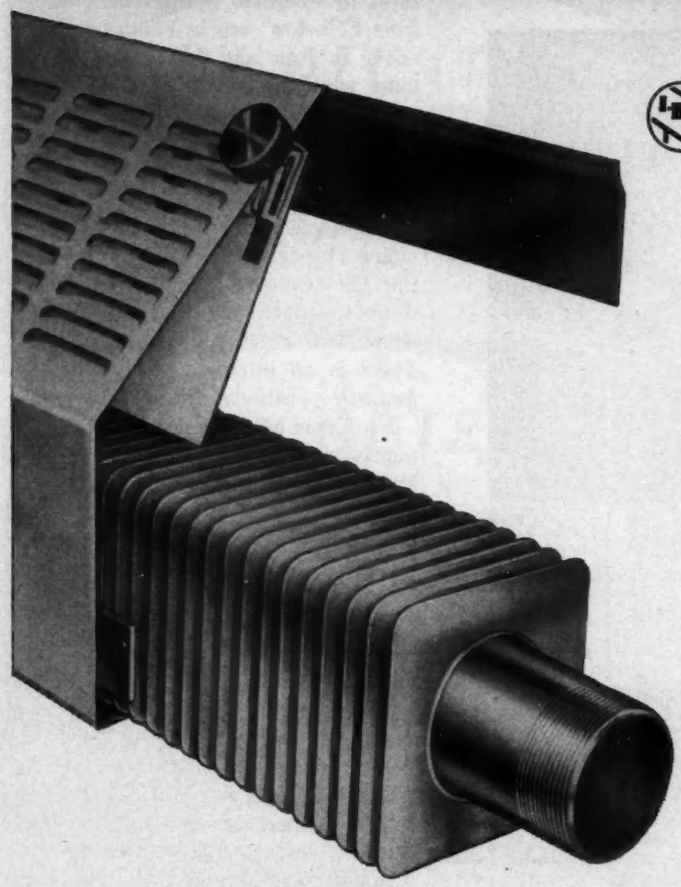

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AIR ACADEMY DESIGN AS FOGARTY SEES IT

(*Continued from page 16*)

scrolls of wood that cluttered up every building that was erected for a time. Today, the buildings which were victims of that architectural aberration are archaic curiosities.

Architectural styles are variable and fickle. Yet West Point and Annapolis are as in keeping with American tradition today as the day they were built. It is significant, too, that each of these great service Academies has found it desirable to tell its history — and the history of the United States — through statuary, busts of its heroes, murals, portraits, and other objects of art. Presumably, the Air Force has the same goals — to immortalize its pioneers, its leaders, and its generations of fighting men. It would seem strange, indeed, if the Air Force has not planned artistic representations of the history of aviation, murals depicting our great aerial victories, statues of Gen. Billy Mitchell, and our other heroes of the air. This is visual education. Thus is taught reverence for service and country. But how do you execute a mural on a glass wall? Where do you hang the portraits? Is there any place for tradition and a narration of the history of America amid glass walls and aluminum panels? I think not.

Now we come to the second point. The choice of materials. Glass and metal, of course, are alien to American monumental design — even to European. This is so obvious it needs no further comment. Let us then concern ourselves with the compatibility of the materials with their demands from the standpoint of structure and environment. The Weather Bureau reports that temperatures in Colorado Springs area range from 27 below zero in February to 97 above in June and July. There is intense sunlight. Yet the Academy instruction building has glass walls, floor to ceiling. Any engineer can provide information on the heating and air-conditioning problems of glass buildings. The problem is difficult; the costs, enormous. I understand the glass walls of the Air Academy buildings are to be tinted to reduce some of the glare. There seems little or no justification for this. There is an interesting — not to say fantastic — rationalization of it.

I will read one sentence from the current issue of the magazine, *Architectural Forum*. Commenting upon the glass walls and their effect on the airmen, the *Forum* states:

"Some days they will squint, but the basic Air Force expression is a cowboy squint, shrewd and appraising."

It is a fascinating rationalization — to make a virtue out of a structural fault which makes you squint to protect your vision.

Let us consider another factor. An 8-inch brick wall will easily withstand a 4-hour fire test during which the temperature applied rises to 2300 degrees. Actually, many fire clays will resist up to 3000 degrees. This 4-hour fire rating is mandatory in many parts of the country. Glass, on the other hand, provides little or no fire protection. It shatters easily under lateral force, pressure, and/or heat. Aluminum, of which a generous amount is contemplated in the Air Academy, melts at 1200 degrees. This temperature is reached in less than 10 minutes of the fire-rating test. These fire test specifications are established by the American Society for Testing Materials.

Now let us come back to the aluminum panels recommended for exterior wall

(*Continued on page 308*)

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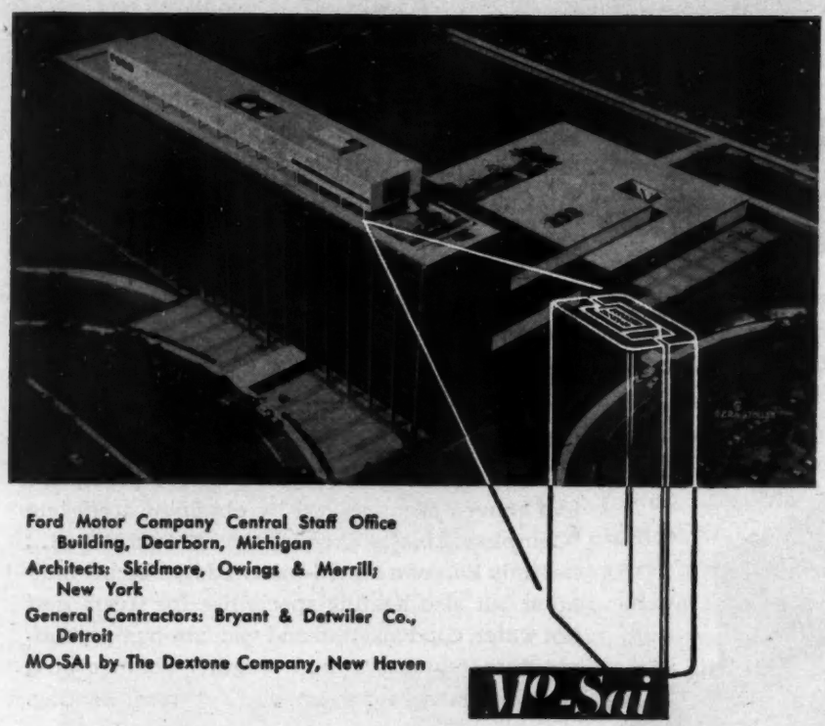

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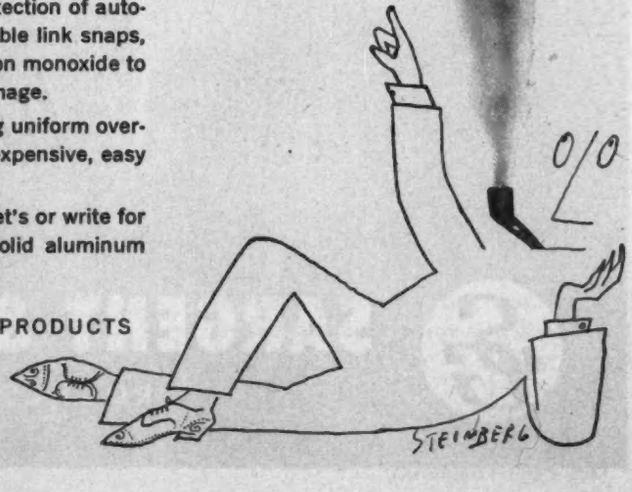

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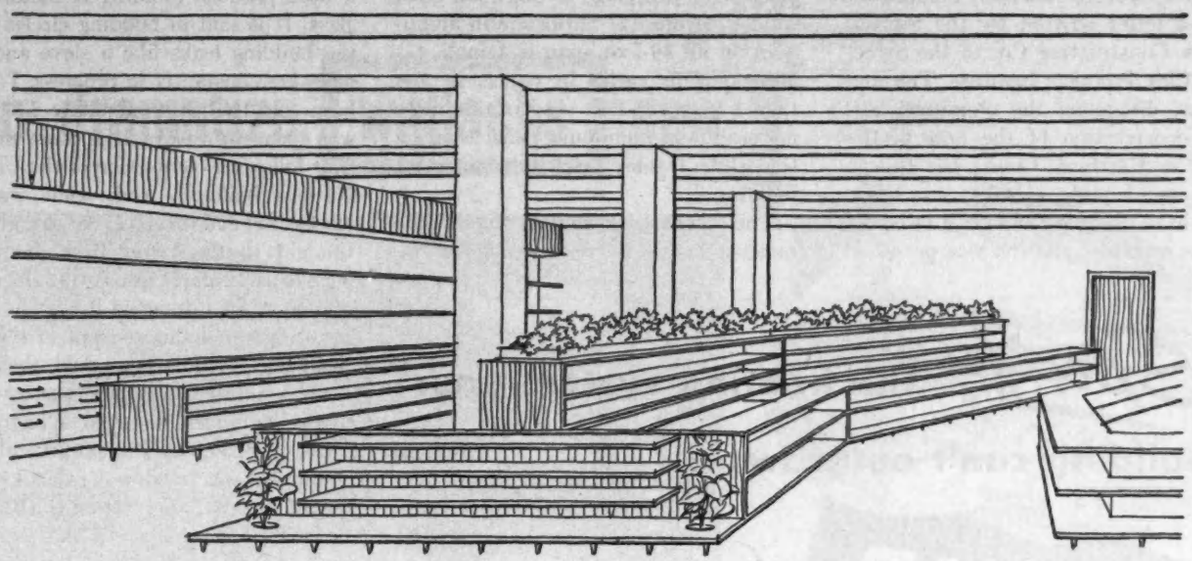

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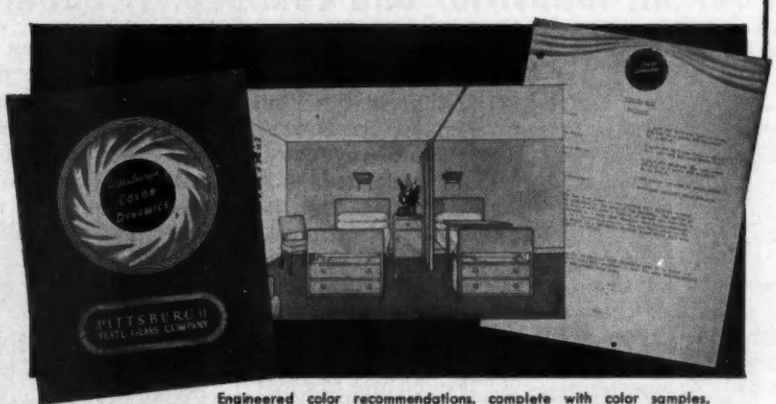

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AIR ACADEMY DESIGN AS FOGARTY SEES IT

(*Continued from page 304*)

use on several Air Academy buildings. I have a letter written by the Sibbald Mason Constructing Co. to the Structural Clay Products Institute. The contractor, discussing the aluminum and steel construction of the new Statler Hotel in Hartford, Conn., has this to say — and I quote —

"I have observed and been informed by the architect and the vice president of the Statler chain of an existing condition that has caused considerable anxiety due to several facts as, namely, (1) it is difficult to hold caulking in place to stop leakage as vibration from wind is severe. (2) Shrinkage in aluminum on an 80-foot span is 1 inch. (3) Discoloration varies in panels in less than 1 year. (4) Dirt seems to be more noticeable on aluminum panel than on the white Hanley brick used on same building."

This information hints at the maintenance problems and costs which the Nation's taxpayers would face with the Air Academy. It would be interesting to have maintenance figures on the United Nations building in New York. The United Nations building is metal and glass. It is said in building circles that the building leaks like a sieve and repairs are constantly in progress. I have been told that approximately $360,000 was spent on repairs little more than a year following completion of the United Nations building. And, while we are discussing maintenance, let us give a thought to the Lever Bros. building. This is particularly interesting since the architects who designed it are the ones who originated this concept of the Air Academy. I have been told that the Lever building had to have special scaffolding equipment installed on its roof at a cost of $250,000. The purpose of this equipment was to allow continual washing of the building exterior with the Lever Bros. products — soap. I am told further that the building owners were required by insurance costs and the risks involved to hire scaffoldmen rather than ordinary window washers for the continual scrubbing of the glass walls.

It must be remembered that glass, like metal, requires constant cleaning, else it quickly takes on a dirty, unpleasant appearance. This is not true of brick, stone, granite, or any form of masonry. Masonry grows more beautiful with age. Architects say it would detract from the beauty of the Washington Monument to clean its stone sides. Recently, the National Press Building here in Washington had its first cleaning in 28 years. The renovation process, according to the newspaper stories, cost less than $10,000. So here you have it — $250,000 just to install the scaffolding equipment on the Lever Bros. building — $10,000 for a once-in-28-years cleaning job on the Press Building.

There is still another factor — that of cost. It is true that in monumental building the question of construction cost can be considered secondary. However, this should only apply, it seems to me, when it has been established that the building material in question is the finest, most suitable, and the most beautiful available. Since we have disposed of the question of beauty and suitability, let us, then, see if there is any argument to be made in behalf of these experimental materials on the basis of cost. You may remember an article which appeared in *Life* magazine last year in which it was alleged that the metal walls of a new building at Park Avenue between 49th and 50th Streets in New

(*Continued on page 314*)

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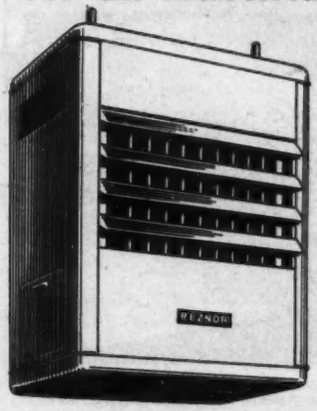

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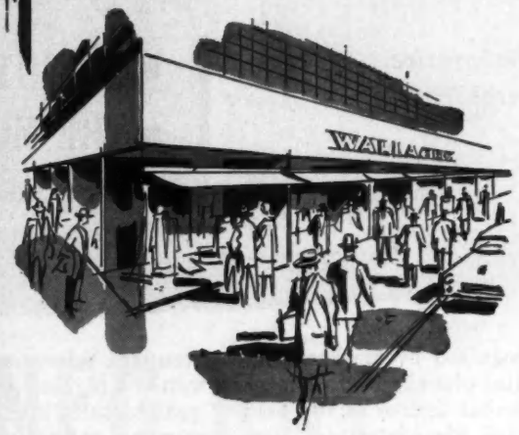

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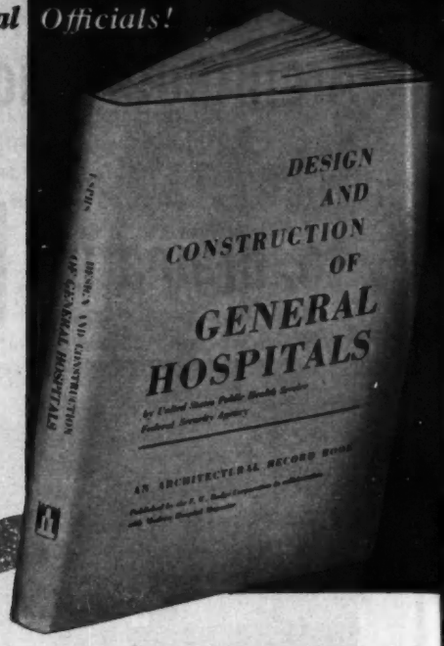

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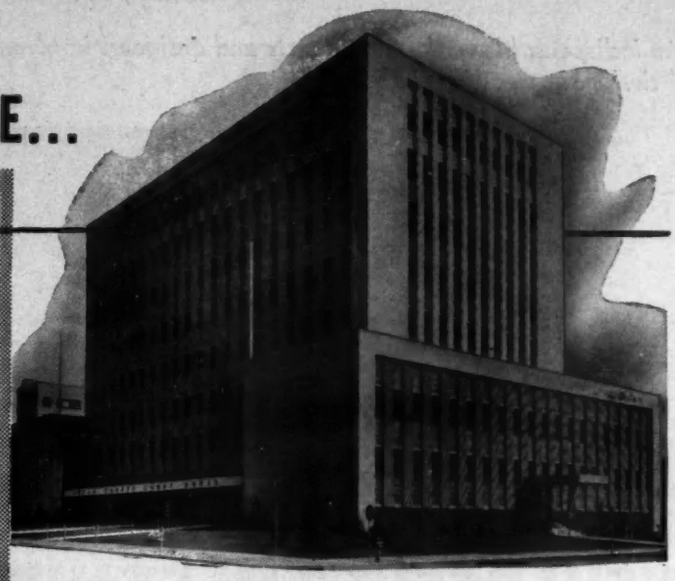
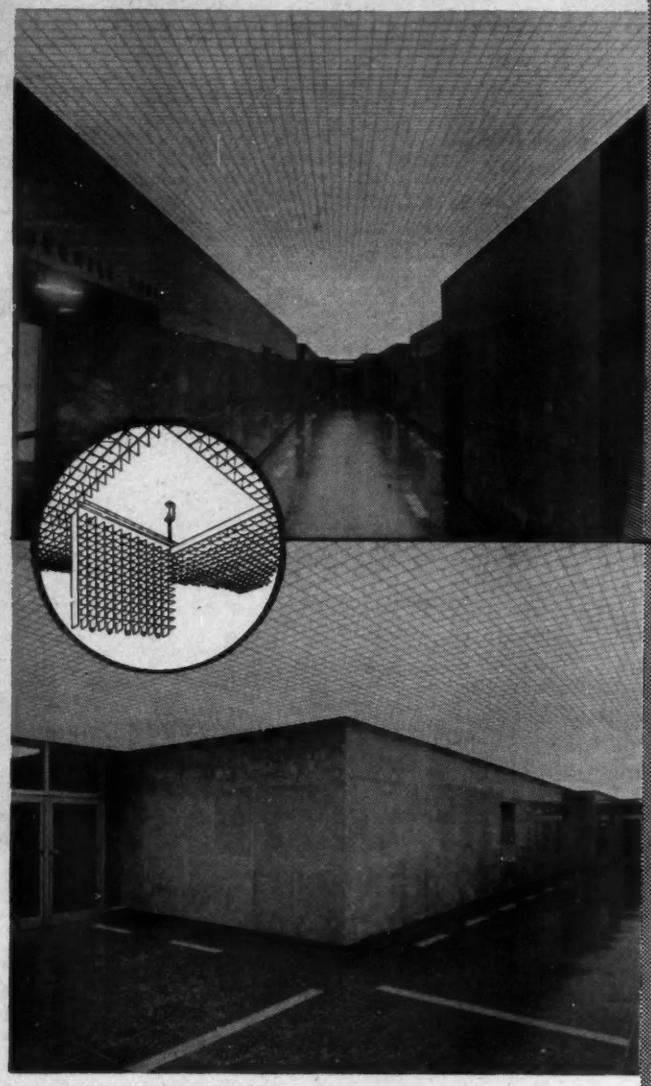


TULSA COUNTY COURT HOUSE
TULSA, OKLAHOMA

Architect: BLACK & WEST, Tulsa, Oklahoma
Engineers: CARNAHAN & THOMPSON, Oklahoma City, Oklahoma
Electrical Contractor: MANHATTAN CONSTRUCTION CO.



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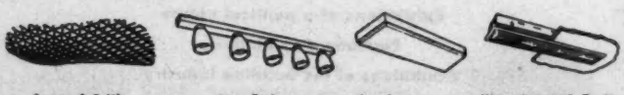

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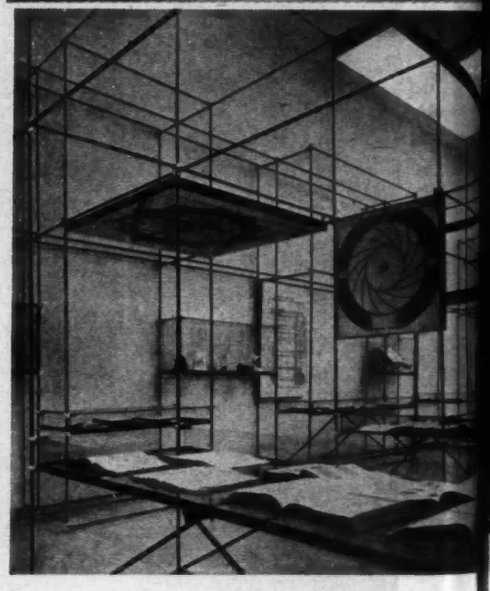

NEW DESIGN IN EXHIBITIONS

by Richard P. Lohse

Here is the first comprehensive book on modern exhibition design and architecture. *New Design in Exhibitions* gives an international cross-section of classics in this field. Superbly illustrated, this unique volume draws upon the finest work done in the past 20 years by architects and designers in the United States, England, France, Italy, Germany, Holland, the Scandinavian countries and Switzerland.

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Richard P. Lohse is a Swiss architect who has specialized in exhibition design. He is editor-in-chief of *Bauen und Wohnen,* a Swiss architectural journal.

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Experimental research Photography

Exhibitions of social nature;
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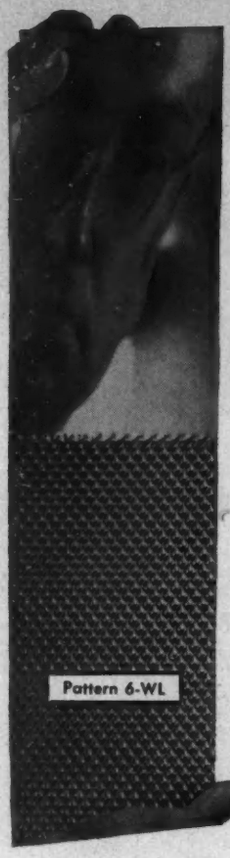

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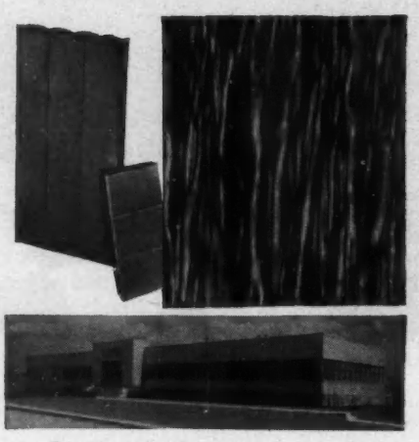

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AIR ACADEMY DESIGN AS FOGARTY SEES IT

(*Continued from page 308*)

York City were actually built in 1 day. Actually, one of the Nation's top contractors, John A. Mulligan, established that a crew of 20 men spent 5 months getting ready for that 1 day of slapping metal panels on the building.

And at least a week before the 1-day publicity stunt, all construction trades were laid off while special crews set all the panels in the proper positions for the blitz installation. This 22-story building was constructed with two walls of metal and two of glazed brick. Mr. Mulligan states, in a letter addressed to President Harry C. Bates, of the Bricklayers Union, that all the masonry in the building, including labor and materials — and the masonry backing for the metal panels — cost less than $250,000. The metal walls cost more than $1 million.

In last January's issue of *Architectural Forum*, there was an article on New York's new Socony-Vacuum building, a 42-story structure. I will quote but two paragraphs from the story. They state: "'And what about the added cost?' asked Harrison and Horr, the architect and builder. 'Would not a stainless-steel skin cost half again as much as brick?' But the steel industry wanted the building, and cost was not going to prevent them from getting it. To meet the competition, they were willing to write off any price differential as the cost of promoting steel. Result: New York's biggest skyscraper in 25 years will have a stainless steel skin." I will cite one other example — the Pennsylvania State Office Building in Pittsburgh's Golden Triangle.

Here, aluminum was selected as the exterior facing material. There were built 12-inch walls, 6 inches of aluminum, and 6 inches of block backup. For purposes of comparison, let us take a 10-inch cavity wall of brick and tile. This would provide a thinner wall and create more interior room. Now the 12-inch metal walls of the Pennsylvania State office building will pass a 2-hour fire test. The 10-inch brick-and-tile wall mentioned will pass a 4-hour fire test. The square-foot cost of the aluminum wall built in this Golden Triangle building was $6.73. This is a square-foot cost — in place. The square-foot cost of the brick-and-tile wall, using a glazed-face brick, is $4.31 in place, a saving of $2.42 per square foot. The time con-

(*Continued on page 318*)

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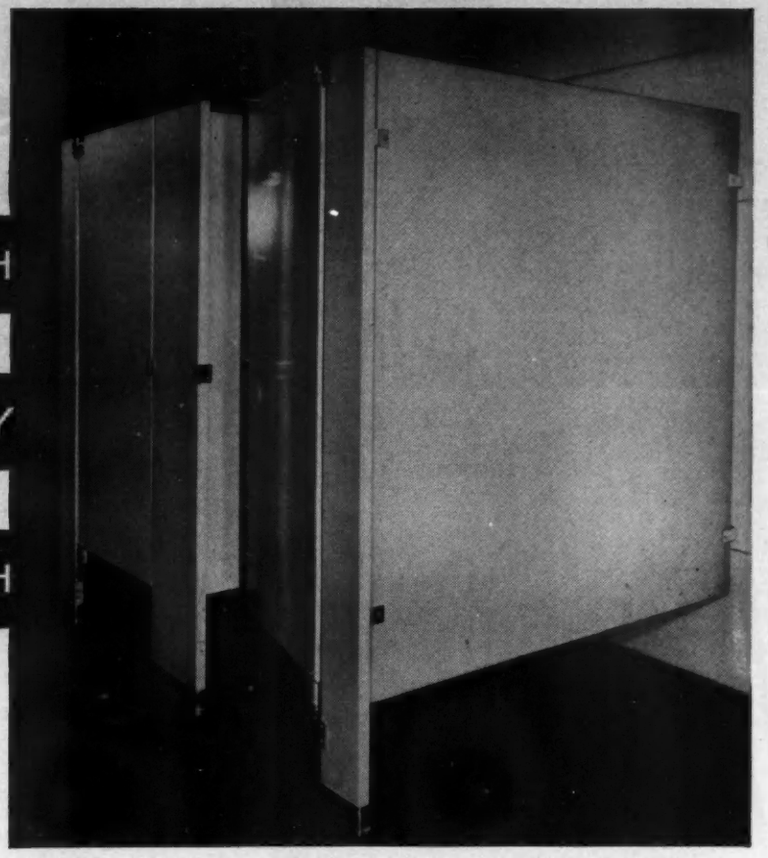

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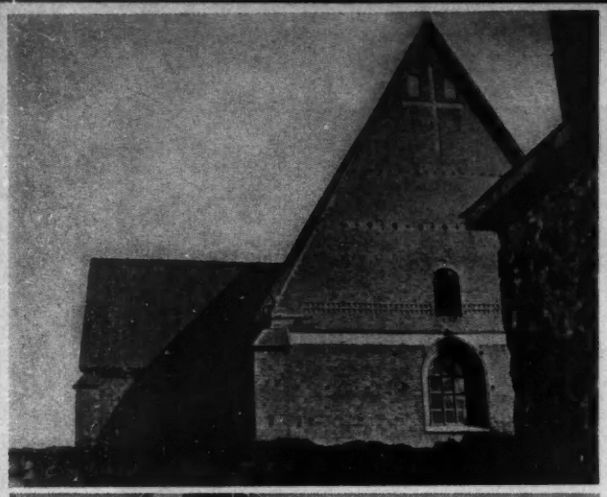

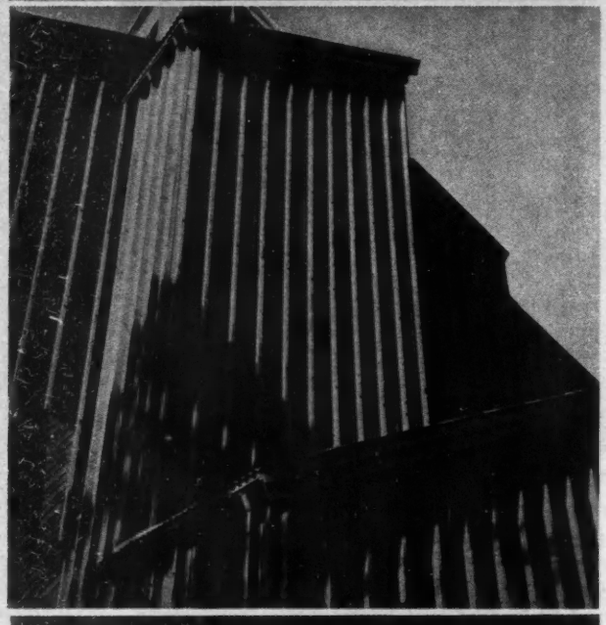

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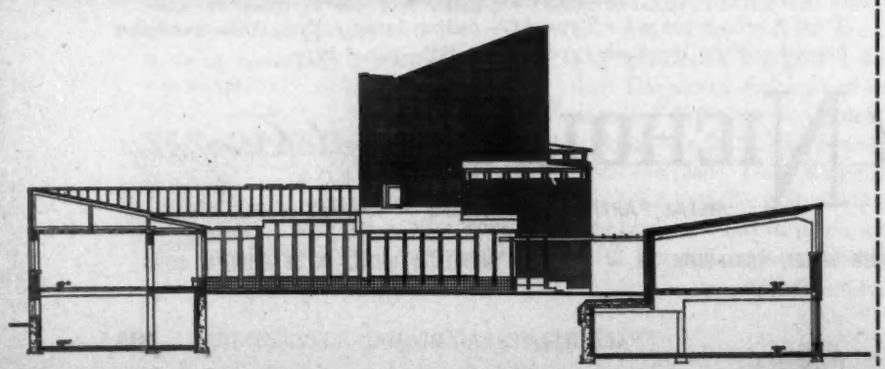

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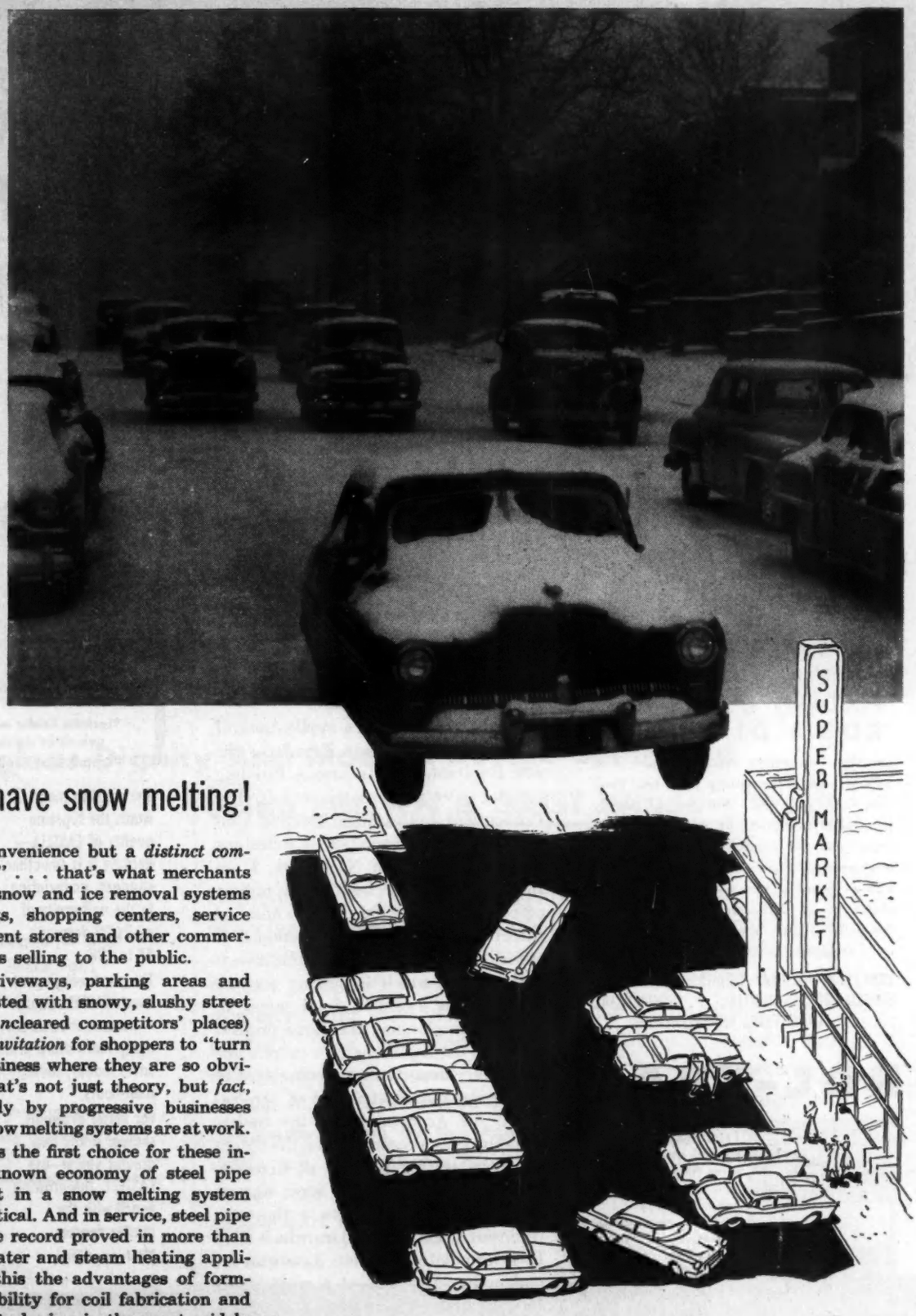

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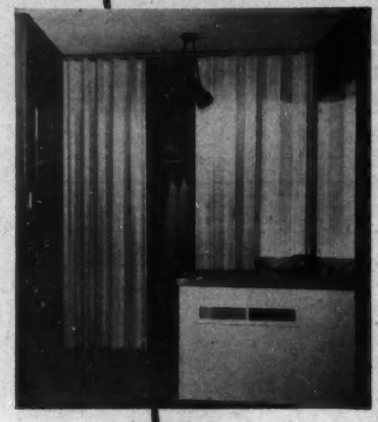

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AIR ACADEMY DESIGN AS FOGARTY SEES IT

(Continued from page 314)

sumed in construction is the same for both materials — 6 to 12 months — assuming, of course, that delivery of the metal is prompt.

I mention this because of the amusement created in building circles by the new Colgate-Palmolive-Peet Co. Building in New York. There a wall of glazed brick was built between January 28, 1955, and May 11. The adjacent metal walls were started November 12, 1954. The last I heard, the date of completion was set for some time in June.

I have singled out these few examples to make the point that purely from the structural standpoint, these materials have not proved themselves. They are experimental. This is not to say that all metal buildings are bad. Many of them may be good. But the over-all question of worth must be decided many years hence. For they have not yet withstood the test of time. It is significant that in the Roman Coliseum, there are bricks and stone standing today in their original positions. The bricks are 1 inch thick and 24 inches long. They are relatively unwarped and in good condition after 2200 years of exposure.

Today we see modern applications of these materials. In San Francisco, the new Equitable Life Insurance Building exterior is Vermont marble veneer. The Prudential Life Insurance Building, Chicago's biggest skyscraper, is limestone backed by brick. In New York, I am told, there is to be built a $20 million office building at Fifth Avenue and 53d Street whose walls will be fashioned of stone. Interestingly enough, the investment group which is paying for the building has switched from metal to masonry in planning this large project.

I have attempted here to cover some of the very important points involved in the design and construction of our National Air Academy. It is my understanding that a conference on the design has been set for June 20 at Colorado Springs. At that time, I hope, earnest thought will be given to a thorough reconsideration of the plans which have been formulated thus far. American art and architecture moved a great stride forward under the urging of a capable architect who became President of the United States. Let us follow the urging of Thomas Jefferson — to challenge the world in our building as we have challenged the world in our Constitution.

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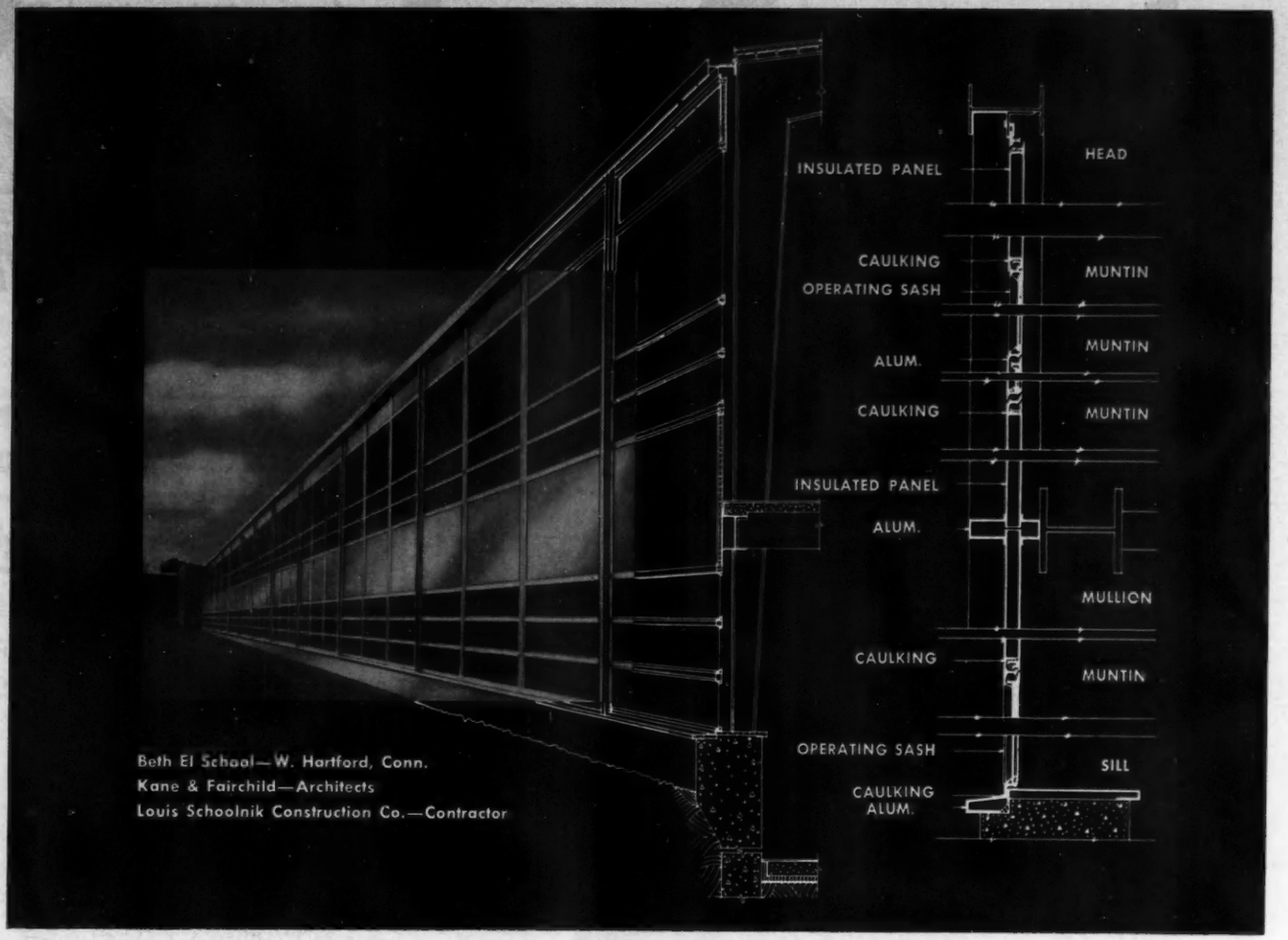

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This graceful new structure is the Adolphus Tower Building, a 30-story office building in Dallas, Texas. Originally its steel frame had been designed for riveted construction, and the two lower tiers were erected in this manner. But to speed up erection, Bethlehem High-Strength Bolts were used to join the remainder of the steel skeleton. This enabled the builder to meet the rapid erection schedule that had been set for the job.

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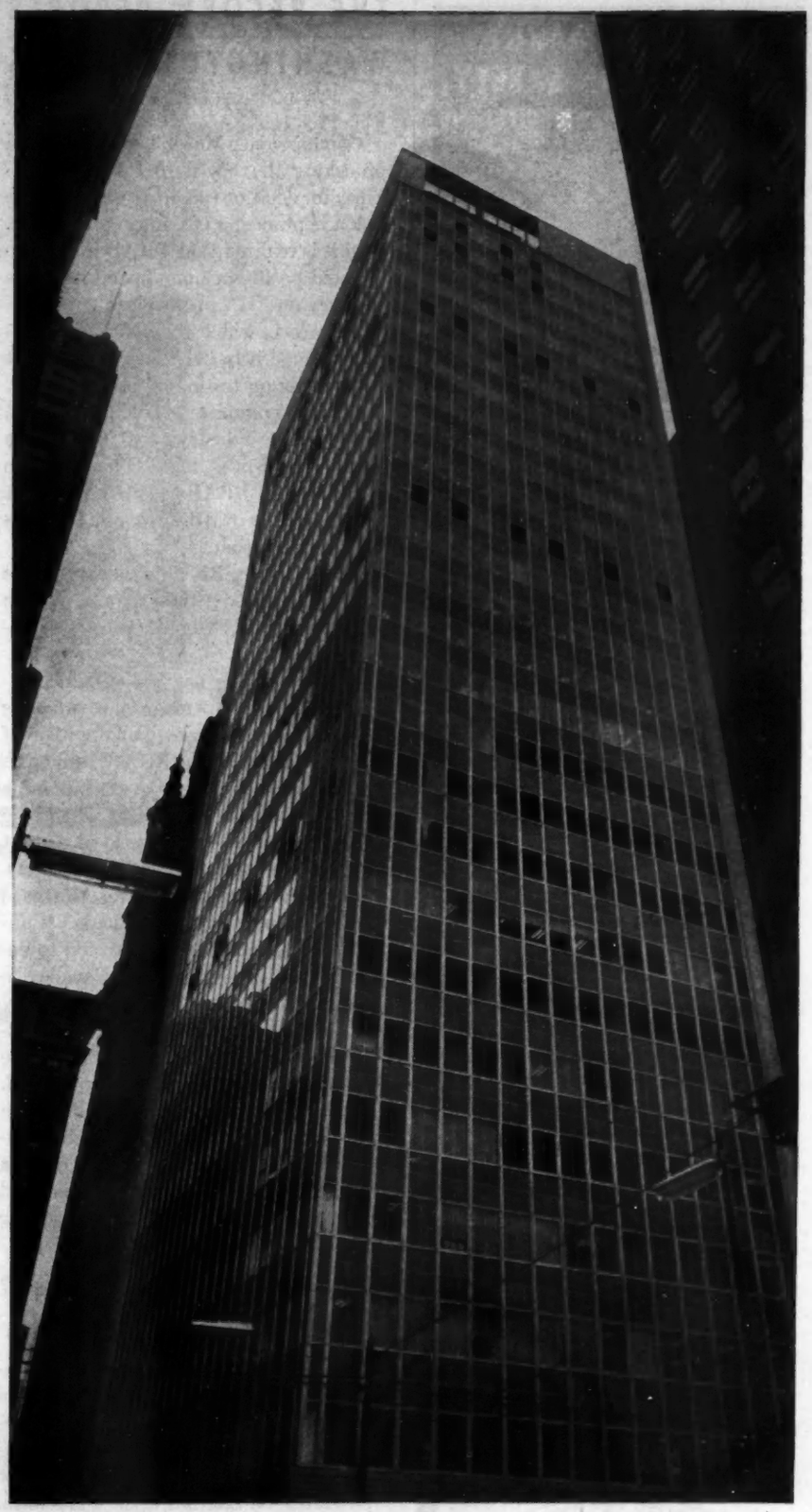

30-story Adolphus Tower Building, Dallas. *Owner:* Dallas Hotel Co.; *Architect:* Wyatt C. Hedrick, Dallas; *General Contractor:* Henry C. Beck Company, Dallas-Atlanta.

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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 38)

Commissioner Mason has no intention of asking the board to take responsibility for decisions on all aspects of product acceptance; FHA must retain this. And it is realized that BRAB in its constituted position cannot spend its funds to carry on FHA operations.

An area in which the research organization could help FHA, however, is that of advising on testing of new materials. Technical committees could be established to give industry's best information on the problem at hand. This could be assembled by BRAB for FHA and FHA could make its own decisions on the basis of BRAB's report.

For example, BRAB could designate a testing agency it thinks could best do the job and FHA could be guided accordingly.

Essence of the new national acceptance concept is to make new products acceptable everywhere upon approval of one application to the FHA Washington office. Regional offices can exercise some judgment on acceptability from the standpoint of value in the local market and effect on appraisal for local markets.

Ira Ashfield of the Central Mortgage and Housing Corp. of Canada, (Canada's FHA) attended the session to describe procedures there. In Canada, he said, the acceptance program is entirely national, handled by CMHC. Basic policy provides that new products must be "at least as good" as any currently used.

There, also, the Building Research Division of the National Research Council of Canada provides technical criteria advice, can develop new criteria, and carry on new product tests, performing research to solve new problems.

KESTNBAUM STUDY SUPPORTS MAJOR U. S. AID PROGRAMS

A two-year study of Federal grants-in-aid to states and broader aspects of Federal, state and local government relationships has resulted in recommendations that all of the major assistance programs be continued in some form. Aid for construction of public schools was considered to be justified only on a temporary basis and only for those states demonstrating a proven inability to meet established needs. The wording left the door open for limited Federal assistance on an emergency basis.

The 25-member Commission on Inter-

(Continued on page 326)

AUTOMATIC SWING CHECK VALVE AND MANUALLY OPERATED GATE

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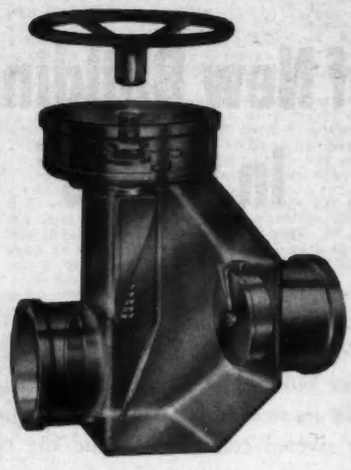

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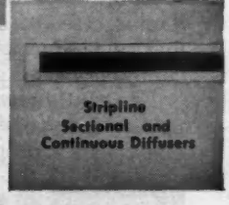

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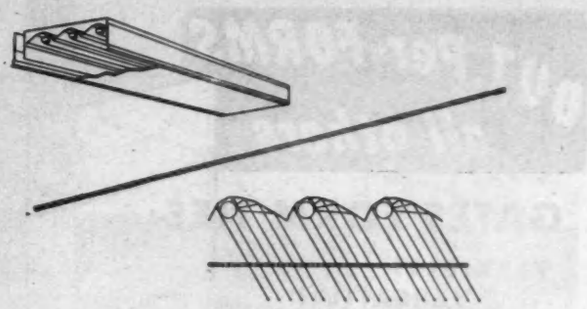
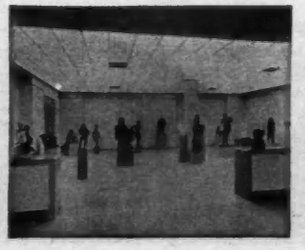


Whitney chose Century!

Problem *To create something different in museum atmosphere at the new Whitney Museum of American Art. To eliminate glare and harsh shadows while providing directional lighting of pictures. To make lighting an integral part of the architecture.*

Solution *Century's paracyl reflector, a precision instrument combined with fluorescent slimline and cold cathode lamps providing an overall luminous ceiling while cutting off objectionable brightness. The 3 tube directional luminaires are recessed behind louvered glass panels and arranged in patterns to permit glare-free lighting. The louvers, slanted at an angle of 30°, make the light source invisible to the observer at normal viewing distances.*

Result *Accurate color quality preserved in the artwork in spite of the total exclusion of daylight. Dramatic! Effective! Efficient! The lighting at the Whitney is proof of how successfully Century worked with lighting consultant Thomas Smith Kelly, architect August L. Noel and others connected with the project.*



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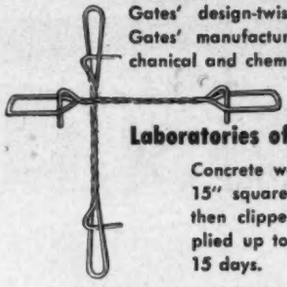

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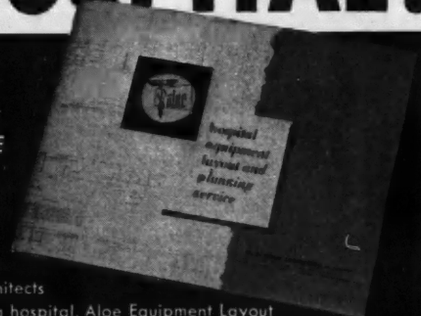

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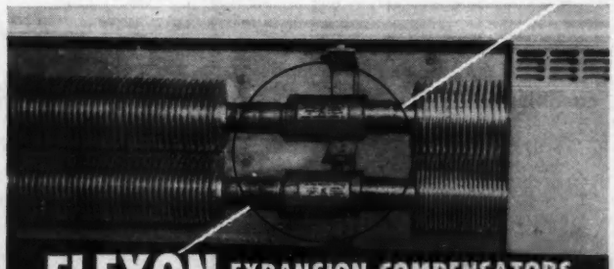

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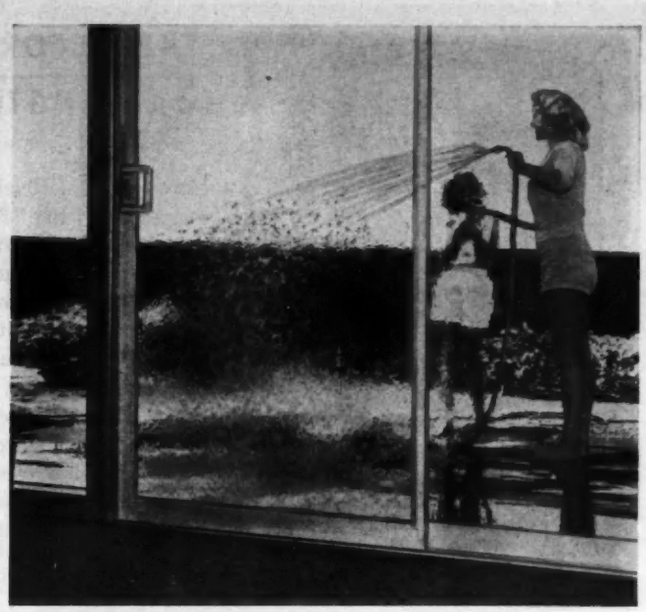

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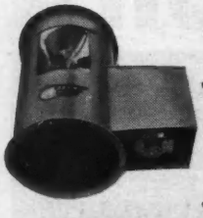

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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 322)

governmental Relations, sometimes referred to as the "Kestnbaum Commission" for its Chairman, Myron Kestnbaum, also recommended continued grants-in-aid for construction of hospitals and other health facilities.

With certain modifications, it was recommended that the Federal government continue its technical and financial assistance to state and local governments for slum clearance and urban renewal, metropolitan planning and low-rent public housing. The findings also told the President that in the Commission's opinion Federal aid for airport construction should be continued on its present cost sharing basis.

EXTRA LENGTH IN GARAGES AMONG NEW MPR CHANGES

New automobiles are longer, and Federal Housing Administration last month recognized this commercial "fact of life" by revising its Minimum Property Requirements to provide for 20-ft garages in new FHA-insured houses. The previous minimum length was 19 ft. The MPR change was made, FHA said, in recognition of widespread reports that the additional length must be obtained to accommodate the longer automobiles now being produced.

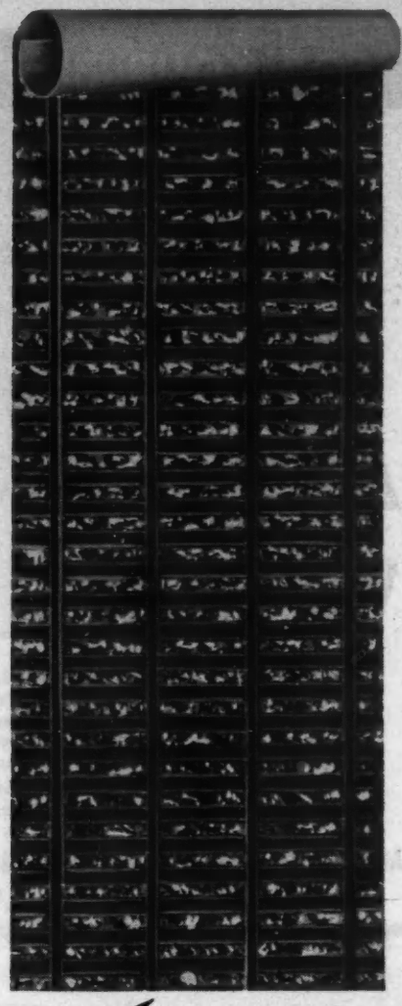
Other significant MPR revisions, some relaxing, some tightening, included these:

— Final acceptance now is permitted before all utility connections are made if the Chief Underwriter is assured that satisfactory connections will be made. FHA found it impracticable to operate under the former provision that final acceptance had to follow complete installation of all equipment and utilities.

— Failures due to poor quality of some concrete blocks caused FHA to tighten its MPR's to require that all concrete block shall conform to specifications listed in Appendix C. If doubt exists about quality of units produced, or delivered to site, certification by the manufacturer — or certified test data — indicating that the material conforms to the applicable specification will be required.

— FHA now allows a wood joist floor system without anchoring. This change was based on an investigation showing that many unanchored systems have served their purpose satisfactorily. Some of the agency's suggested details still

(Continued on page 330)



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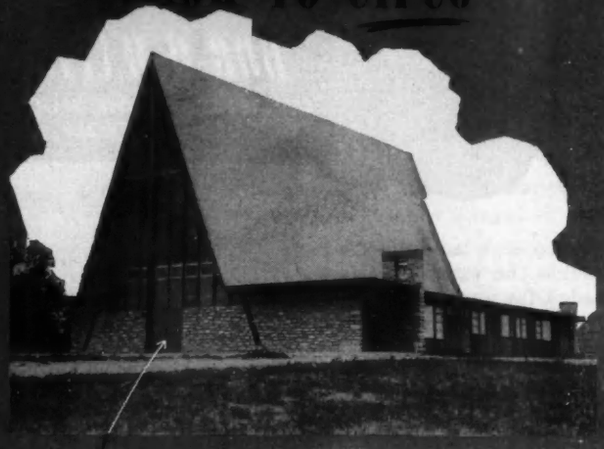

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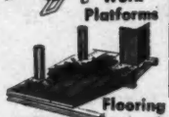

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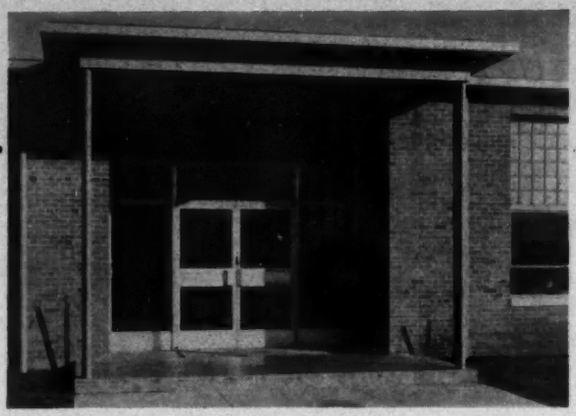

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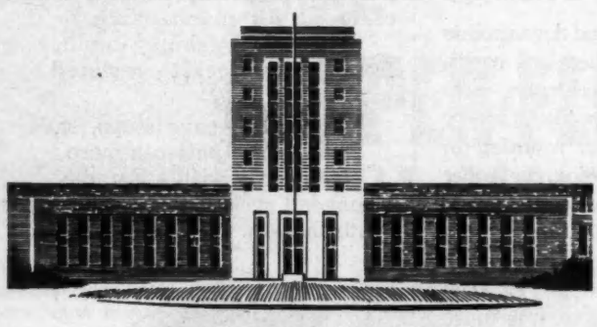

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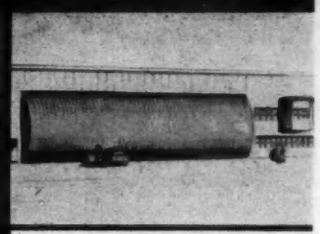

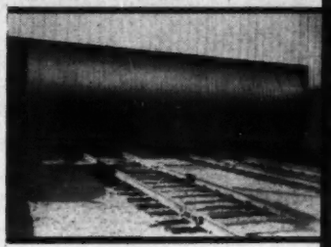

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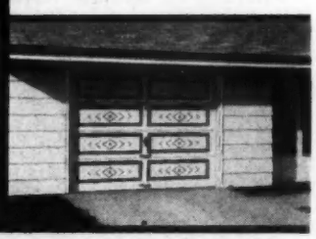

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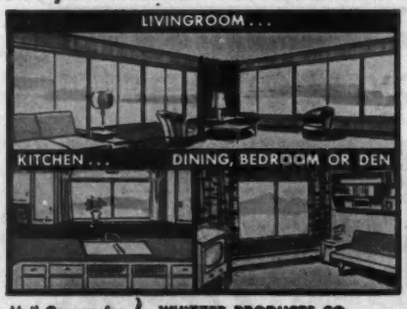

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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 326)

show anchoring of wood sills to foundations under wood joists. These are not requirements, and the suggested construction details were to be revised to bring them in line with the new MPR.

— Another relaxation dealt with corner bracing. Corner bracing now can be installed on the inside face of studs and does not have to be let into the corner post. Such bracing, however, must continue to be let into the studs, the sill and plate. This revision followed consultation with Forest Products Laboratory experts and examination of data showing that racking could be resisted by placing the bracing in this fashion.

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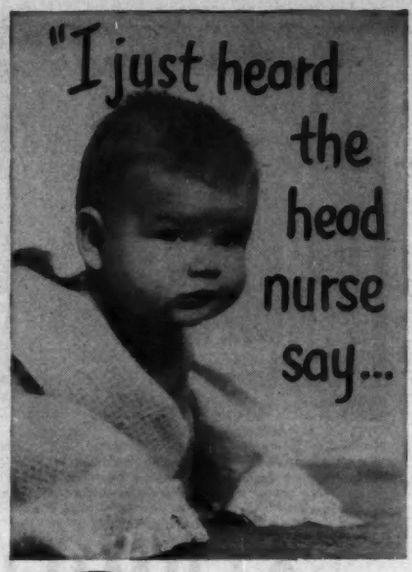
— Unexposed portions of galvanized sheet metal, when it is used as flashing or roofing, no longer have to be painted. FHA said satisfactory performance had been indicated in most areas where the unexposed portions of galvanized sheet metal were not painted.

— Hereafter, gutters and downspoints will be required only where soil conditions, drainage of surface water, eave flashings, etc., on each specific property will produce a condition resulting in dampness, flooding, erosion, or other damage by surface or ground water.

— Final change in the series concerned finish floors. FHA now accepts in both new and existing houses, plywood or other hardsurfaced materials as finish floor if it is the intent of the builder or owner to install wall-to-wall carpeting. Such carpet installations cannot be a part of the insured mortgage.

FHA's architectural standards division emphasized that these were minimum requirements only and that it is as much interested in relaxing the minimum items as in tightening them.

The agency also expected to have new MPR revisions on plaster thickness and insulation requirements by the end of July. A new ruling on slab-on-ground construction was due, but probably would not appear until later because of a delay in submission of the report on this subject from the Building Research Advisory Board. A four-month study was completed by BRAB for FHA June 30, but the final report was delayed.



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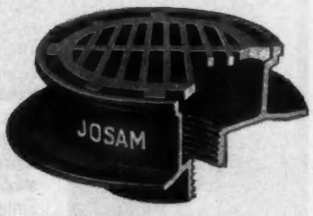

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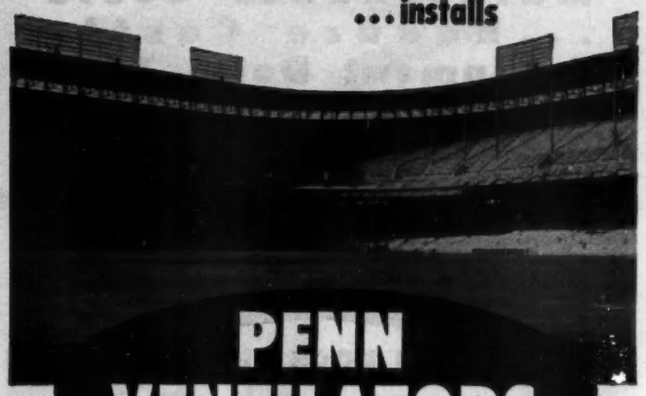

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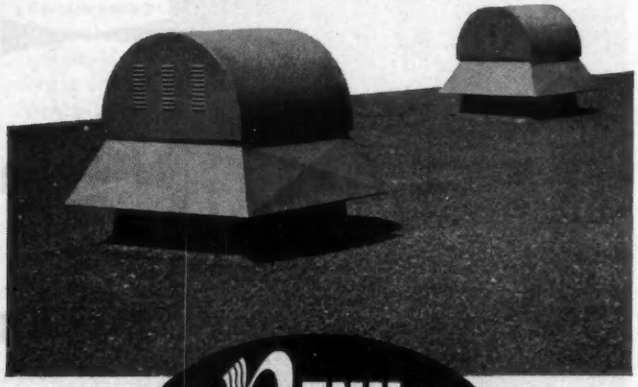

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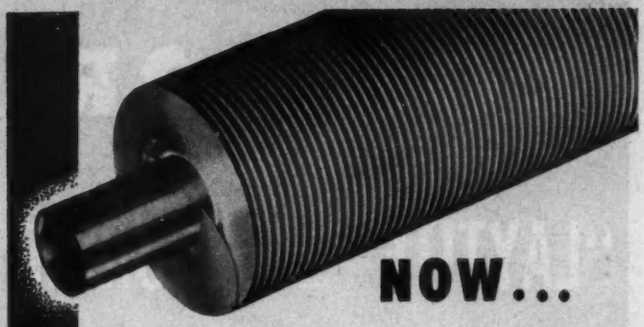

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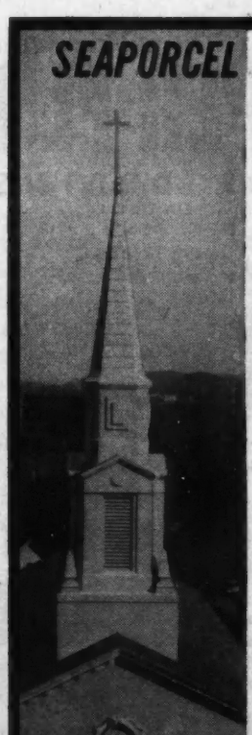

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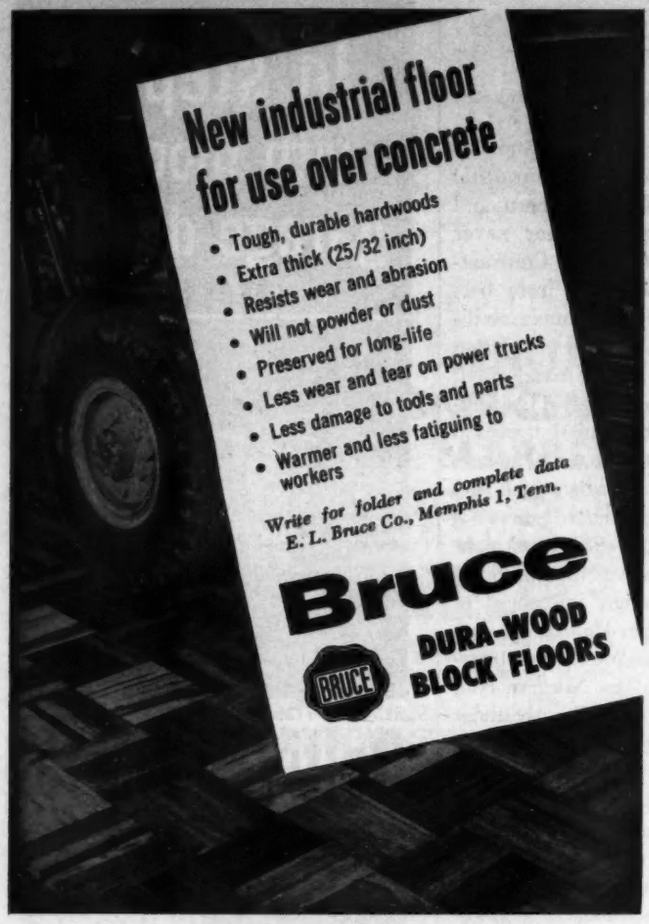
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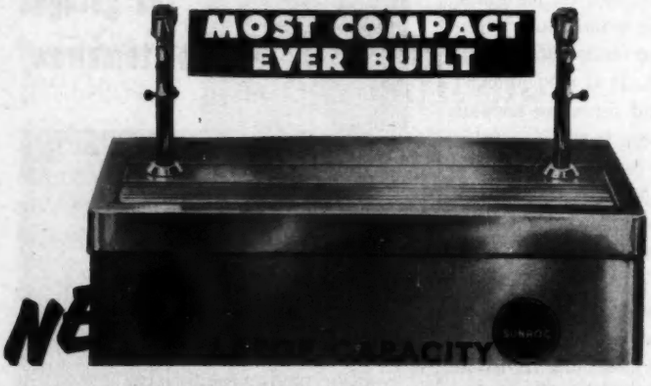

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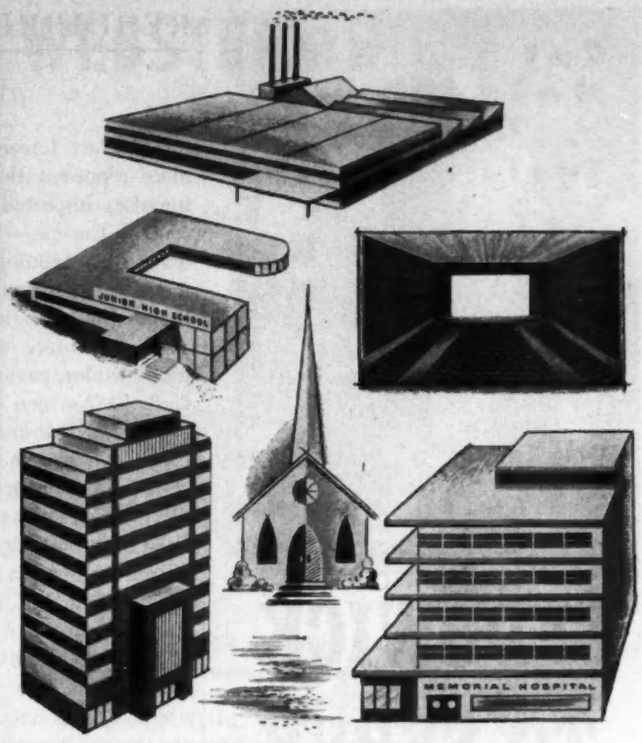

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REQUIRED READING

(Continued from page 48)

for abstract linear decoration and the more representational and naturalistic impulses imported from southern and central Europe — one tendency never quite overwhelming the other. Contrasting artistic influences stem from barbarian Celtic origins and Roman civilization; Teuton myth and Christian biblical tales; pagan Viking invader and Catholic Norman conqueror. This mingling of barbaric and humanistic tradition continues through the five major phases of British sculptural art into which Mr. Stone divides his study. There is first the Pre-Conquest sculpture (670–1066), consisting mainly of a native Northumbrian revival and the foreign influences of Carolingian and Anglo Danish art, followed by the Romanesque Period (1066–1180) where, due to the Norman conquest, Britain comes more directly under the sway of French, Flemish, Italian and Byzantine style. The 13th century Idealistic Phase (1180–1275) deals principally with the sculptors' decoration of churches, culminating with their work in the cathedrals of Lincoln, Wells, Salisbury and Westminster. The Decorated Period (1275–1350), as its name implies, develops the ornate and often morbid and grotesque tendencies so persistent in British art. It is also marked by a growing demand for more secular art — effigies, brasses, heraldic shields — a demand that is carried on into the last period of Late Medieval Sculpture (1350–1540) that also attempts a revival of the high standards of the 13th Century.

Inevitably, because of its former close association with the Catholic Church, all sculptural activity is brought to an abrupt and effective end by the Reformation. As a single volume, Mr. Stone's study brings life and understanding to the unfortunately few surviving remains of British Medieval sculpture. It also forms a worthwhile addition to the Pelican History of Art series. **Nicole Papazian**

Industrial Design in America, 1954. Edited by the Society of Industrial Designers. Farrar, Straus & Young (New York, N. Y.) 1954. 224 pp, illus. $12.50

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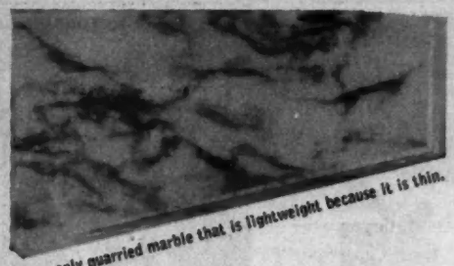

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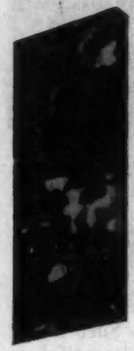

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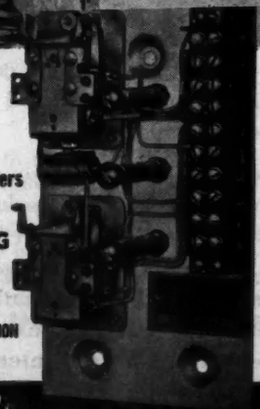

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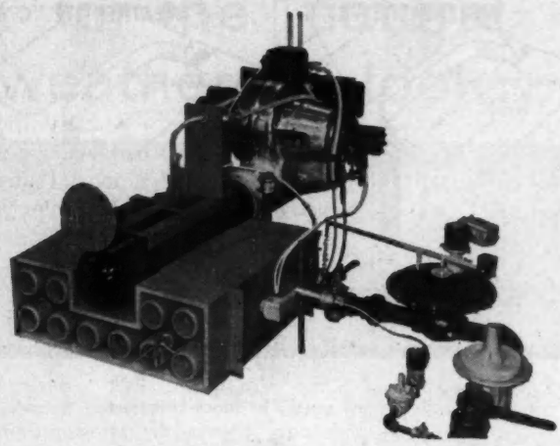

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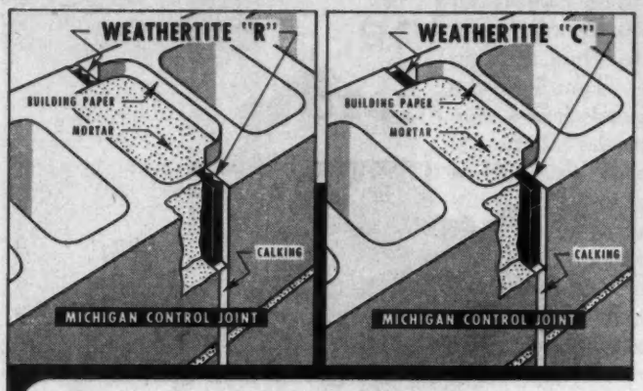

To safeguard against cracks in block-constructed masonry walls, caused by shrinkage, always use an approved Control Joint . . . to prevent water seepage through these very necessary control joints, always use WEATHERTITE. Two types are available: WEATHERTITE "C" is self-expanding cork; WEATHERTITE "R" is an expanded Polyvinyl-Chloride. Either type will provide an EFFECTIVE SEAL in Control Joints of block-constructed masonry walls.

See Sweet's Files, or write for information.

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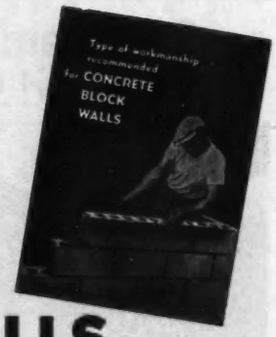
TYPE OF WORKMANSHIP RECOMMENDED FOR CONCRETE BLOCK WALLS



Despite the fact that more than half of all masonry work is done with concrete blocks, very little information on good *workmanship* has been issued.

The booklet shown above contains a full description of good block workmanship. It is completely illustrated. It is endorsed by leading officials of the American Institute of Architects, Mason Contractors Association, National Concrete Masonry Association and the Bricklayers, Masons and Plasterers International Union. It should be in the hands of every architect, contractor and bricklayer.

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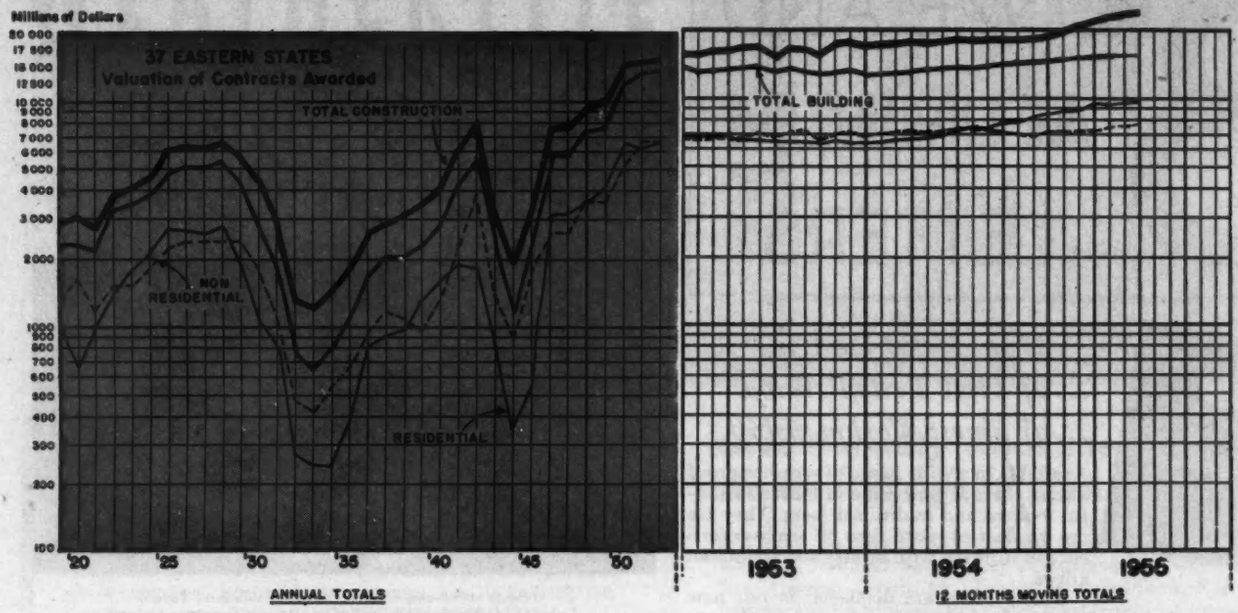


1955 FIRST HALF AT ALL-TIME HIGH

Totals for June construction contract awards in the 37 eastern states as reported by F. W. Dodge Corporation set new records in all categories and completed the biggest first half in construction history: a dollar total of $11,982,771,000, 30 per cent ahead of the previous first-six-months high in 1954. Percentage gains were well-balanced among the three basic categories: residential contracts totaled $5,456,730,000, 37 per cent over the 1954 first half; nonresidential $4,132,513,000, up 21 per cent; heavy engineering $2,393,528,000, up 29 per cent. June awards of $2,255,209,000 were 30 per cent ahead of June 1954 and a new record for the month. Residential awards, at $951,104,000, had their second successive month-to-month decline, off six per cent from May, but were 32 per cent over June 1954. Nonresidential construction, at $842,618,000, was up 16 per cent from May and 28 per cent from June 1954.

Source: F. W. Dodge Corporation

HOSPITAL BUILDING COMPARED WITH TOTAL NONRESIDENTIAL

Contracts Awarded—37 Eastern States

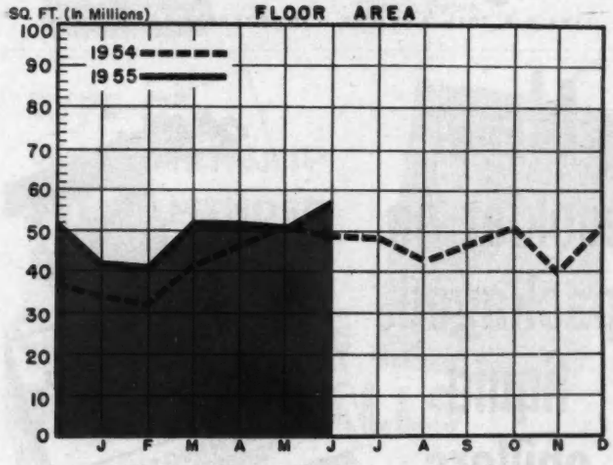
Valuation in Millions of Dollars

Year	Hospital Building	Total Nonresidential	%	Year	Hospital Building	Total Nonresidential	%
1929	125	2425	5	1950	616	5182	12
1935	39	681	6	1951	551	6822	8
1943	110	1424	8	1952	402	6695	6
1947	175	2716	6	1953	404	6956	6

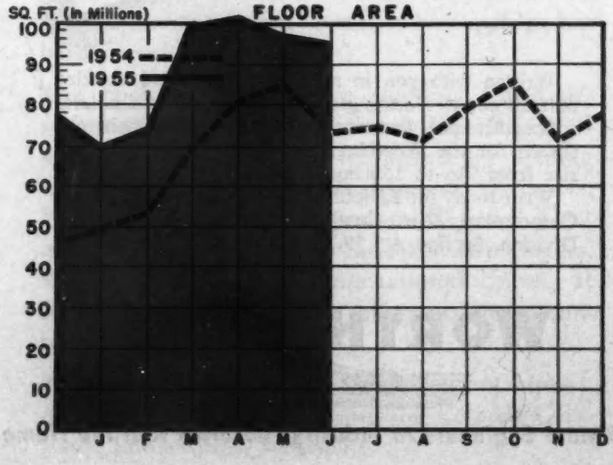
	Hospital Building		Total Nonresidential		Percentage	
	1954	1955	1954	1955	1954	1955
Jan.	38	46	473	565	8	8
Feb.	44	31	469	534	9	6
Mar.	25	30	532	759	5	4
Apr.	29	42	605	706	5	6
May	52	33	672	726	8	5
June	44	78	656	843	7	9
July	48		642		7	
Aug.	23		551		4	
Sept.	49		647		8	
Oct.	50		671		7	
Nov.	31		491		6	
Dec.	50		701		7	
12 mos.	484		7110		7	

Charts by Dodge Statistical Research Service

NONRESIDENTIAL BUILDING (37 EASTERN STATES)



RESIDENTIAL BUILDING (37 EASTERN STATES)



NEW **BEAUTY OF CONCRETE MASONRY**

Architecturally proper" is a good way to sum p the fine appearance the block wall of this modern masonry home. Vibrapac Block construction lends itself to permanence and shelter security.

The beauty of building with modern concrete block is this: It's *permanently* beautiful!

The precision-like beauty and simplicity expressed by pleasing new textures, patterns and colors in Vibrapac Block are always in "good taste" . . . for exteriors and interiors. Whatever your plans call for in terms of size, design or investment, there's a proper adaptation that's practical and effective in Vibrapac Block or Bes-Stone Split-Block.

The opportunities modern concrete masonry ffers for building permanent beauty into omes (and other structures) include many ractical advantages.

Obviously there's beauty *plus* fire safety n Vibrapac Block construction . . . and many other *plus* values such as: "built-in" nsulation (due to the hollow block areas nd multiplicity of tiny dead-air cells in he block itself) . . . assurance of comfortable inside atmosphere, summer or winter, with winter heating-economies, too . . . storm-safety, weather snugness . . . sound-absorbing qualities . . . permanent protection from termites and rodents, from damp-rot or deterioration by weather.

With all these and other *plus* values, the initial construction cost is low . . . financing becomes easier . . . insurance rates lower . . . upkeep, or maintenance, costs less . . . ideal structural flexibility is assured . . . good resale value is certain.

Planter made with Bes-Stone Split-Block

Ranch-house architecture is at its best when Vibrapac Block are used.

Charming beauty for interiors, too! For complete interior walls and ceilings (soffit block ceiling and roof construction), or for "accenting" details like floral bays, fireplaces, etc., modern concrete masonry offers countless opportunities for distinctive beauty and colorful beauty. "Charcoal gray" and "coral," as well as other good color schemes, are "naturals" for modern concrete masonry. Helpful literature gladly sent on request.

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Catalogs of the firms listed below are available in the 1955 Sweet's Catalog Files as follows: (A) Architectural File (green), (IC) Industrial Construction File (blue), (LC) Light Construction File (yellow)

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Gold Bond Technical Bulletin No. 2032 has complete specifications and application data on the many uses of Gold Bond Corrugated Asbestone Products.

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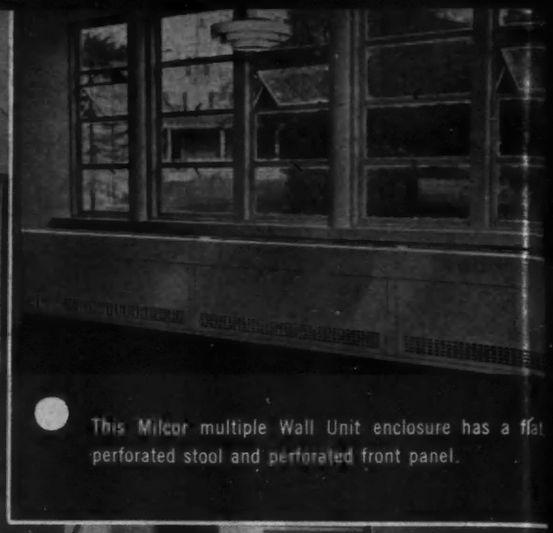
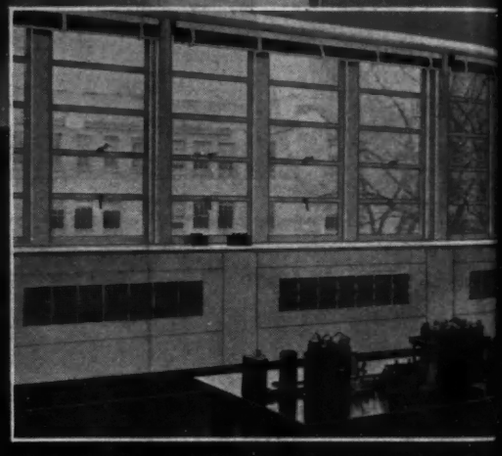
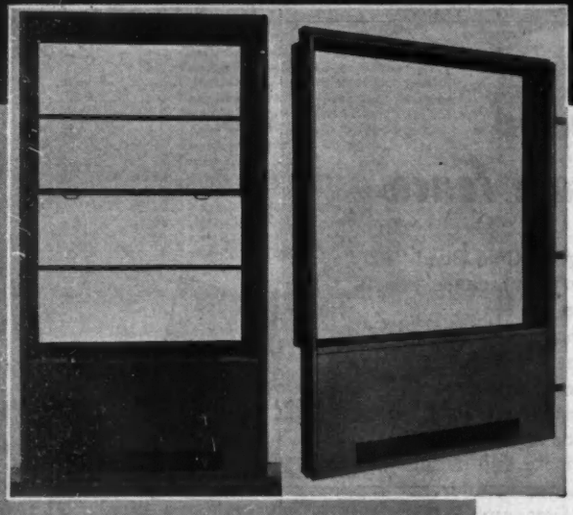
Perforations for warm-air circulation are in the splay type stool of this Milcor Wall Unit. Cold air entry is at bottom. Supporting posts are recessed.



This Milcor multiple Wall Unit enclosure has a flat perforated stool and perforated front panel.



Milcor multiple Wall Unit enclosure is recessed into window opening in science laboratory of a leading university.



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